PROJECT REPORT

A STUDY ON ELECTRIC MOTOR BIKES

Submitted in partial fulfillment of the requirements for the award of the degree of

B.B.A (Bachelor of Business Administration)

By

D. GOWTHAM (UBAA1765)

Under the guidance of

Sri N. KALAINESAN

Faculty of Department of Business Administration

Ramakrishna Mission Vivekananda College Evening College (Autonomous)

Chennai-600 004



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CERTIFICATE

This is to certify that this Project Work is the bona fide work of **D. GOWTHAM (UBAA1765),** in partial fulfillment for the award of **Bachelor's Degree in Business Administration of Ramakrishna Mission Vivekananda (Evening) College (AUTONOMOUS), affiliated to the University of Madras, Chennai**

Signature of Guide **Head of the Department**

Submitted for the Autonomous **VIVA-VOCE** Examination to be held in April 2020 **at Ramakrishna Mission Vivekananda College, (Evening) Autonomous Affiliated to University of Madras, Chennai.**

Name and Signature of Internal Examiner

Name and Signature of External Examiner

DECLARATION

I, **D. GOWTHAM** (**UBAA1765**) hereby declare that the Project report for the partial fulfillment of the Degree of Bachelor of Business Administration entitled **A STUDY ON ELECTRIC MOTOR BIKES**, is my original work and this Project Work has not formed the basis for the award of any degree, associateship, fellowship or any other similar titles.

Place: Chennai **Signature of the Student**

Date:

CERTIFICATE

This is to certify that this Project Work is the bona fide work of **P. SATHISH (UBAA1720),**in partial fulfillment for the award of **Bachelor's Degree in Business Administration of Ramakrishna Mission Vivekananda (Evening) College (AUTONOMOUS), affiliated to the University of Madras, Chennai**

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This is to certify that this Project Work is the bona fide work of **G. MOHAN KUMAR (UBAA1750),**in partial fulfillment for the award of **Bachelor's Degree in Business Administration of Ramakrishna Mission Vivekananda (Evening) College (AUTONOMOUS), affiliated to the University of Madras, Chennai**

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Date:

ACKNOWLEDGEMENT

This Project Report has required a man moth amount of hard work and research. It could not have been prepared if not for the support & guidance of a number of people , who have provided us with valuable inputs and feedback using their extensive knowledge experience.

Our Head of the Department **Mr. R.Sriram**, for his overall support & guidance which has been of immense value to our final Project Report.

Our Faculty Guide **N. KALAINESAN** Faculty in the Department of Business Administration for providing his valuable inputs that have been of paramount importance in the preparation of our final Project Report.

Finally, we would like to thank all those who helped us in the successful completion of this project by providing us with their valuable time and filling up our questionnaire which became the basis for this study.

TABLE OF CONTENTS

S.NO	TOPICS	PAGE NUMBER
1.	INTRODUCTION	14
2.	METHODOLOGY AND DESIGN OF THE STUDY	20
3.	FINDINGS OF THE STUDY	28
4.	INFERENCE	43
5.	ANNEXURES	44
6.	BIBLIOGRAPHY	46

LIST OF TABLES AND CHARTS

TABLE NO :	NAME OF TABLE/CHART	PAGE NO :
3.1	GENDER DIFFERENTIATION	29
3.2	INCOME LEVEL	30
3.3	ARE YOU AWARE ABOUT E-BIKES	31
3.4	TO KNOW ABOUT ELECTRIC BIKES/SCOOTERS ?	32
3.5	YOU SEEN THE ADVERTISMRNT OF E-BIKES/SCOOTERS	33
3.6	YOU RATE YOUR LEVEL OF AWARENESS TOWARDS E-BIKES	34
3.7	WHICH BIKE ARE YOU USING PRESENTLY	35
3.8	THE E-BIKE MANUFACTURES YOU KNOW	36
3.9	FEATURES YOU WOULD LOOK WHILE PURCHASING AN E-BIKES	37
3.10	YOU RATE E-BIKE IN COMPARISON WITH CONVENTIONAL BIKES	38
3.11	THE FACTORS DO YOU THINK THAT PREVENTS YOU FROM MAKING THE DECISION OF PURCHASING THE E-BIKES	39
3.12	CONVINCED ABOUT THE BENEFITS OF E-BIKES	40
3.13	YOU WOULD SUGGEST AN E-BIKES TO YOUR FEIEND	41
3.14	YOUR SOURCE OF FINANCE	42

ELECTRIC BIKES







CHAPTER-1
INTRODUCTION

ELECTRIC BIKES

TOPIC:"In-depth analysis of impact on inception of electric motor cycle in India"

INTRODUCTION:

This project survey report is based on the consumer's preference towards usage of **electric motor cycles**. The data was collected through both **primary** and **secondary** method. Primary data included questions collected through **questionnaire** and **Google forms** and secondary data was collected from the internet and various other information sources like **newspapers** and **magazines**.

REVOLT BIKES:

FOUNDER: RAHUL SHARMA (CO- FOUNDER OF MICROMAX MOBILES) *

The newest manufacturer to arrive in Indian electric mobility start-up space is the guru gram-based revolt motors that will be introducing its first product in 2019 founded by Rahul Sharma; revolt intelligence has been set-up with an investment of around RS. 400-500 Crores and will commence operations with an electric and artificial intelligence.motorcycle. The revolt facility has an installed capacity of 1.2 lakhs units for the electric motorcycle in the first phase, the young revolt motors new AI enabled electric motorcycle has been under development for two years. The revolt electric motorcycleis expected to come equipped witha swappable lithium-ion battery pack promising a range of 150KM on a single charge, while the top speed will be restricted to 85Kmph.

KLB KOMAKI PVT LTD is a trusted name in Bearings and Driveshaft Business since 1987:

KLB KOMAKI has ventured in the ELECTRIC VEHICLE BUSINESS since 2016. We are one of the most reliable and well equipped manufacturers of Electric Vehicles with best services at nominal prices. KOMAKI ELECTRIC VEHICLE DIVISON includes E-Rickshaw, E-Scooty& E-Loader. All vehicles have been manufactured with highest quality spare parts with arrangement for excellent customer service.

KOMAKI ELECTRIC SCOOTY ‘’XGT KM’’ is our top selling model. The vehicle is trendy, comfortable, light weight and the adapter can be attached easily to the socket at home or at work for charging. We have been delivering it for 2 years now and with increasing sales our target of 1 lakh E Scooties will be achieved until 2019.

Our infrastructural unit is based in Thrissur, Kerela and Kapashera, Delhi with offices and warehouses in Delhi NCR. We have a well-equipped production and assembly unit accompanied with excellent sales and marketing team aiming to provide highest quality product and after sales services.

Hero electric:

Hero electric is India's largest electric two wheelers company. The company manufactures and sells a range of electric scooters, ranging from fuel efficient models to high speed models.

Hero Electric currently has around 300 sales and service outlets spread across the country. With close to 1 lakh electric two wheelers in India, the company has played a very important role in developing the EV market in the country. It is the only electric vehicles manufacturer in India to launch the unique concept of charging stations for anywhere, everywhere charging with in-house design anddevelopment.

Jitendra New EV Tech Pvt.:

Jitendra New EV Tech Pvt. Ltd is a venture of the Shah group to participate into the future of mobility.

The Shah Group is well diversified conglomerate having interest in Real Estate, automotive, retailing, software and manufacturing.

Mr. Jitendra Shah is a third generation entrepreneur of the enterprising and growth driven Shah Group having its Headquarters in Nashik.

Starting at the early age in business, he sensed the opportunity in automotive retail and led the group's foray into the business with a dealership Kirloskar Tractors in 1979

Liberalization of economic policy saw a boom in growth of economy motorcycles and the Shah group was the preferred choice of Hero-Honda in 1985. The partnership is more than 3 decades old and becoming stronger with each passing year. Today the Shah group network for Hero Motocorp has 9 sales outlets and 9 workshops in the Nasik region.

Dealerships of various OEMs were offered to the group and Fiat 1997 and General Motors 1997, dealerships were added to the stable

The Shah group is a dealer representative of the prestigious Mahindra & Mahindra Personal vehicles and Commercial vehicles since 1999.

In 2010 Mahindra Trucks and Buses also was added to the chain.

VW 's offer for representation was accepted in 2009.

TATA Motors Passenger Car Division is the latest brand that the company represents in Nasik

PRANA ELECTRIC MOTOR CYCLES:

Started by MohanrajRamasamy, a former engineer at Tesla, Coimbatore-based Srivaru Motors will soon introduce its first product, a performance electric motorcycle called 'Prana', ahead of the upcoming festive season. According to the timeline posted on the company's website, the sales of the Prana will commence this calendar year.

The SrivaruPrana will compete with mid-size motorcycles like the KTM 250 and KTM 390 Duke among others.

The first product, christened Prana, will compete in the same price bracket as a conventional midsize motorcycle. Thus, expect the electric vehicle to arrive between the INR 2–2.5 lakh (on-road) price range.

In terms of performance, the electric motor on the Prana will deliver 35 Nm of peak torque and weigh 160 kg. The 0-60 km/h acceleration will take less than four seconds, while the top speed will be rated at over 100 km/h. Srivaru Motor claims a range of 126 km per full charge from its fixed Li-ion battery. The company is yet to receive ARAI certification for the range.

The electric vehicle will pack three riding modes – Class, Grand and Elite – and a reverse mode. The Elite riding mode is claimed to boast a range of 250 km. Srivaru Motors will study the customer feedback about the performance, range and price points before introducing the motorcycle.

The Prana will rival the likes of KTM 250 Duke and KTM 390 Duke, Honda CB300R and Bajaj Dominar 400among others. The company claims to have designed and developed the motorcycle at its control centre in Coimbatore. Hardware specifications such as twin-discs at the front and full LED lighting complement the naked roadster styling of the motorcycle. The first product will use 70%-localised parts at launch. The company will target higher localisation of components if the volumes are higher.

The company will start with an annual production capacity of 30,000 units at Coimbatore. It plans to scale up the production to 200,000 units within 18 months from the launch date.

In an interview with Auto Car Professional, Ramasamy said:

We have worked upon five critical areas – styling, range, durability, TCO and service. We are very confident that even if a newcomer company such as Tesla can build products like what customers want, they succeed better than even the most established names.

The electric motor on the SrivaruPrana delivers 35 Nm of peak torque, which helps it accelerate from 0-60 km/h in less than 4 seconds.The launch details and pricing are yet to be revealed. The recently vehicles and FAME-II subsidy would help Srivaru Motors to price its vehicle competitively.

CHAPTER-2
METHODOLOGY AND DESIGN OF THE STUDY

PROJECT AIM



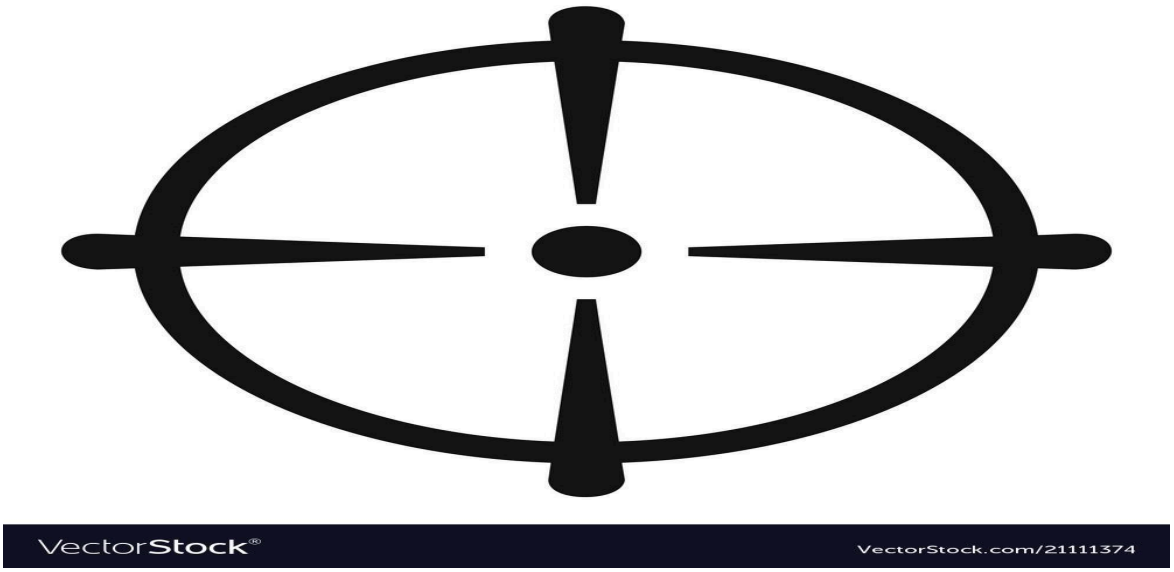
Our aim is to analyse the consumer ideas and needs about the electric motor bikes in India.

PROJECT OBJECTIVE



- To study how much the consumers are ready to spend their disposable income towards electronic bikes.
- To study the current expectations of consumers with respect to electronic motor bikes. This will lead to its potential for identifying the demand in the future.
- To know about the existence and arrivals of electronic vehicles in the market.
- To know about the government initiatives taken for promoting electronic bikes and the subsidies provided on electronic bikes.

SCOPE OF ELECTRONIC BIKES



With some of India's biggest automobile makers for saying into electric vehicles segment, electric scooters and bikes are gradually going mainstream.

Indigenous start-ups like **Ather Energy, Revolt Motorcycles, Prana, Hero Automotive, Komaki Energies and Jitendra** are adding to the influx, backed by the government's 'Make in India' initiative.

With annual domestic sales surpassing 19 million in the fiscal year ended March 31, 2018 (six times the sales of cars over the same duration), India reigns as the world's biggest market for scooters and motorcycles.

The next largest market is China, with annual motorcycle sales of about 17 million. Even as most car makers resist bringing electric cars to India, the sales of electric scooters are expected to exceed **2 million** a year 2030.

Although electric scooters currently make up a fraction of the total, the market is growing rapidly. Reports from the **Society of Manufacturers of Electric Vehicles (SMEV)** reveal that in fiscal 2017-18, sales of electric bikes and scooters from a year ago doubled, while electric car sales dropped to 1,200 from 2,000 during the same time period.

LIMITATION OF ELECTRIC MOTORBIKES



- It's heavy, which makes it difficult to store and very difficult to pedal up a hill if you run of battery power.
- short battery life and long charging time, should you buy a 10 Ah 36 V battery, you are likely limited to around 50km (36mi).
- double the price of a standard bicycle.
- Electric tend to have low resale value and maintenance and repairs are costly.
- awareness about the electric bikes is very low.

ELECTRONIC REVOLUTION



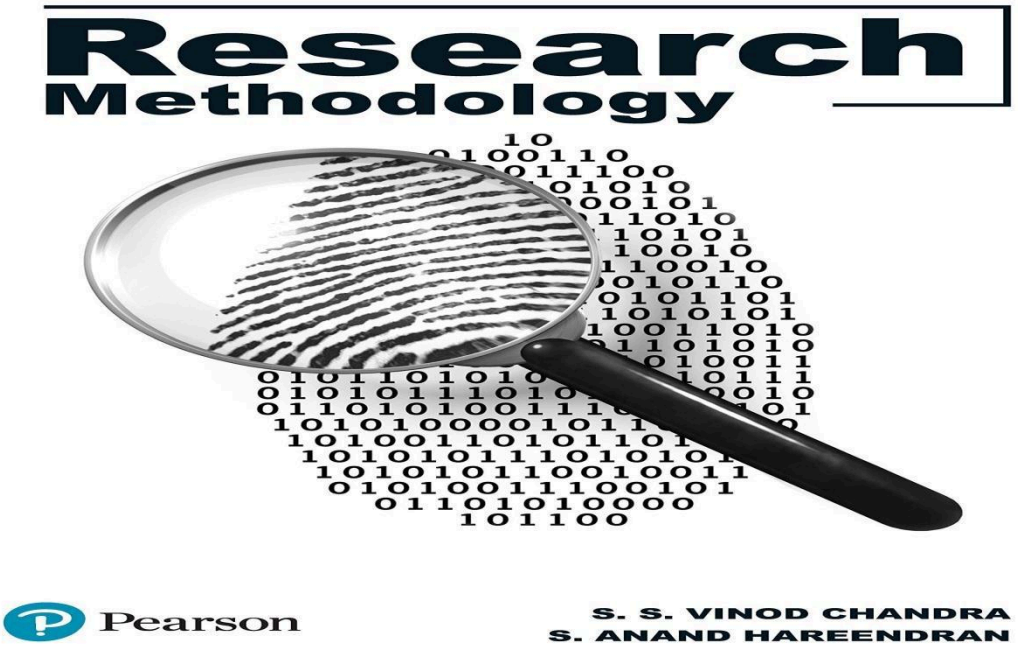
Electric scooters are definitely spearheading the E-revolution in India, since the roadblocks for scooters are fewer. They are lighter as compared to the cars, meaning they can use less powerful and cheaper batteries.

Also, the scooters can be charged quickly and more easily, often using the existing plug points in homes. The price of these e-scooters is also at par with the petrol-powered models.

However, the biggest challenge these electric scooters face is that while they are utilitarian, they are not as powerful as those that run on petrol (which can go faster and climb gradients easily).

Also, the supply chain is not robust, resulting in manufacturers largely relying upon importing components. Despite the few hurdles e-scooters face, So hinder Gill believes the future is bright for clean energy vehicles in India.

RESEARCH METHODOLAGY



The data was collected through traditional methods like providing questionnaires which formed the primary data and information's from newspapers and magazines formed our secondary data.

Google forms were also a primary data which was distributed through electronic mediums and other related websites of the electronic bikes formed another source secondary data.

DATA ANALYSIS



The data was collected and analyzed with a proper guidance and the following information was derived*

CHAPTER-3
FINDINGS OF THE STUDY

GENDER

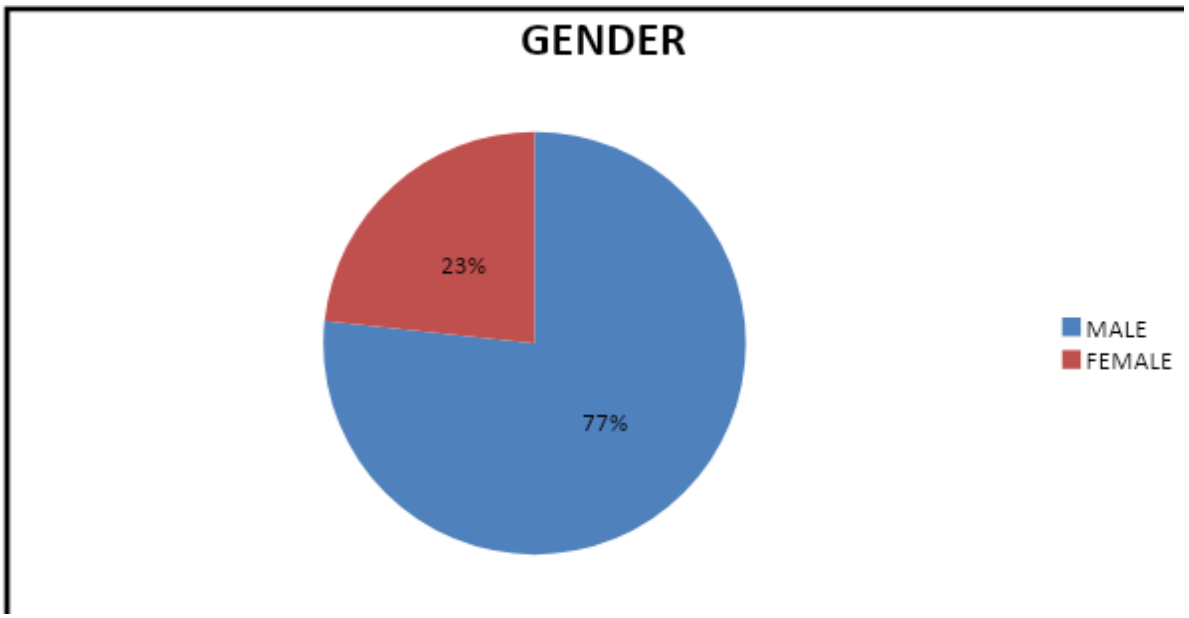


CHART NO :3.1

GENDER	NO.OF.RESPONDENT	PERCENTAGE
MALE	170	76.68%
FEMALE	50	23.32%
TOTAL	220	100%

TABLE NO :3.1

OBSERVATION :

From the above diagram, we come to know that 77% of male have helped us in filling this survey and 23% of female have helped us in filling this survey.

WHAT IS YOUR INCOME LEVEL ?

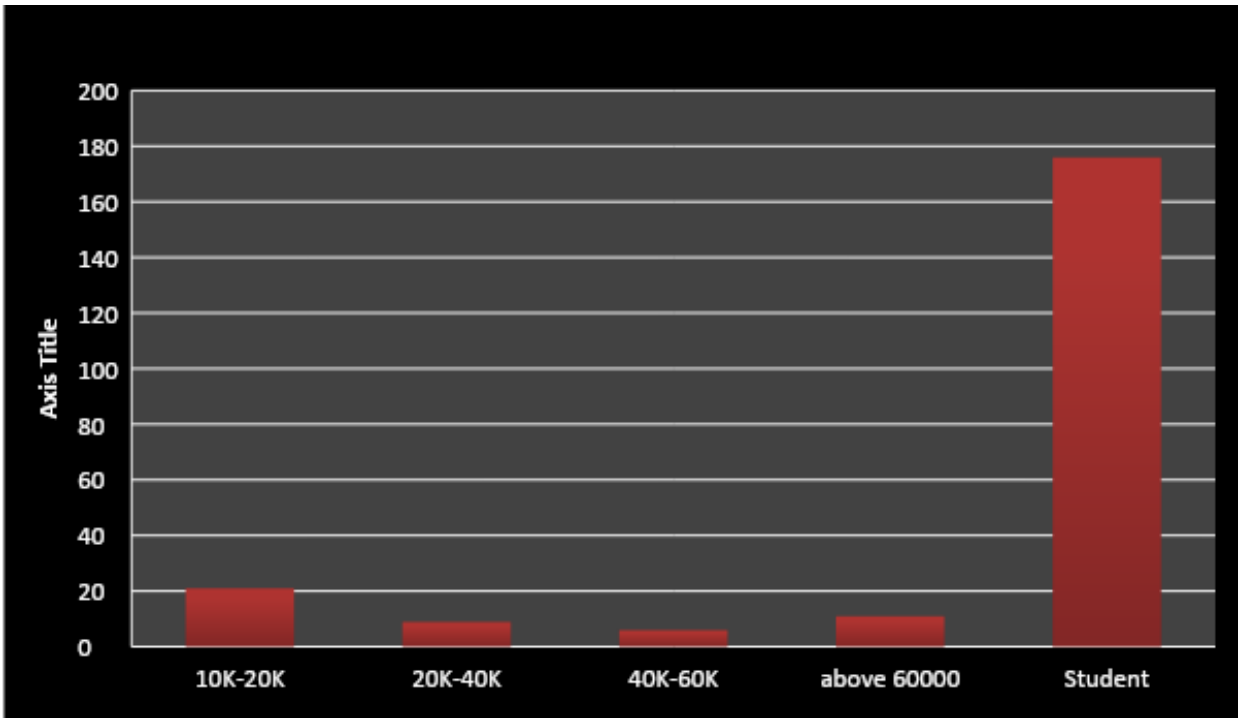


CHART NO :3.2

OBSERVATION:

This bar diagram states that Students are very much aware and interested in purchasing the E-bikes/scooters. Most of the males who helped in filling this questionnaire lies between the income level of Rs.10,000 -20,000.

TABLE NO :3.2

INCOME	NO.OF.RESPONDENT	PERCENTAGE
10K-20K	21	9.42%
20K-40K	9	4.04%
40K-60K	6	2.69%
ABOVE 60,000	11	4.93%
STUDENT	173	78.92%
TOTAL	220	100%

1. ARE YOU AWARE ABOUT E-BIKES ?

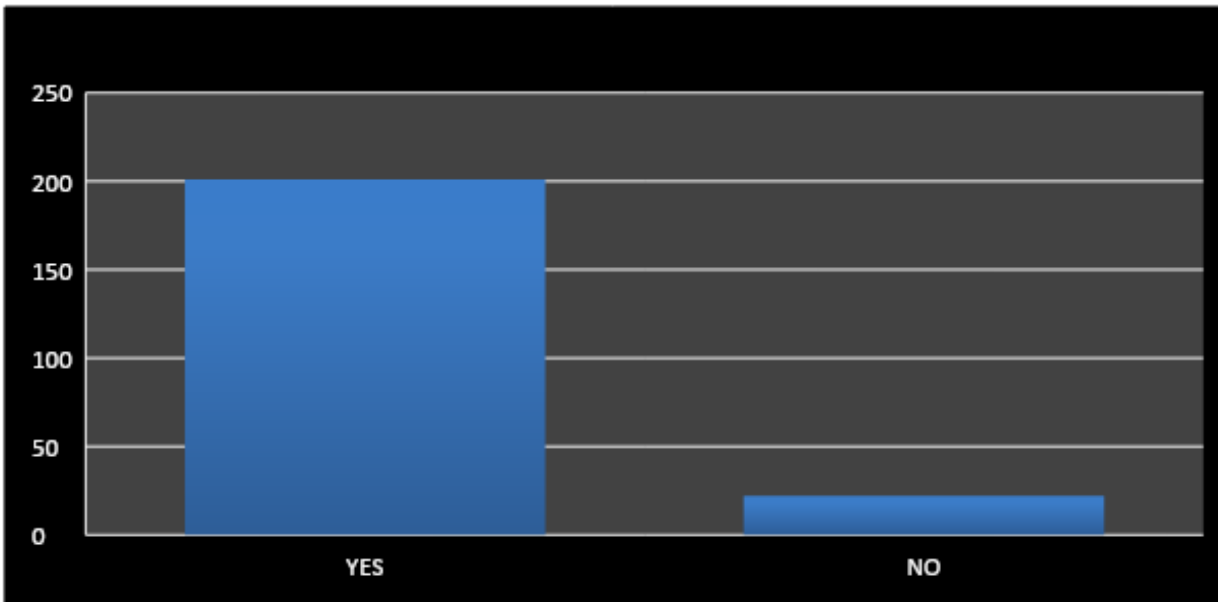


CHART NO :3.3

ARE YOU AWARE ABOUT E-BIKES ?	NO.OF.RESPONDENTS	PERCENTAGE
YES	200	90.13%
NO	20	9.87%
TOTAL	220	100%

TABLE NO :3.3.

OSERVATION:

From the above diagram, we can predict that 90% of people are aware about E-bikes/scooters and 10% of people are not aware about E-bikes/scooters.

2. HOW DID YOU COME TO KNOW ABOUT ELECTRIC BIKES/SCOOTERS?

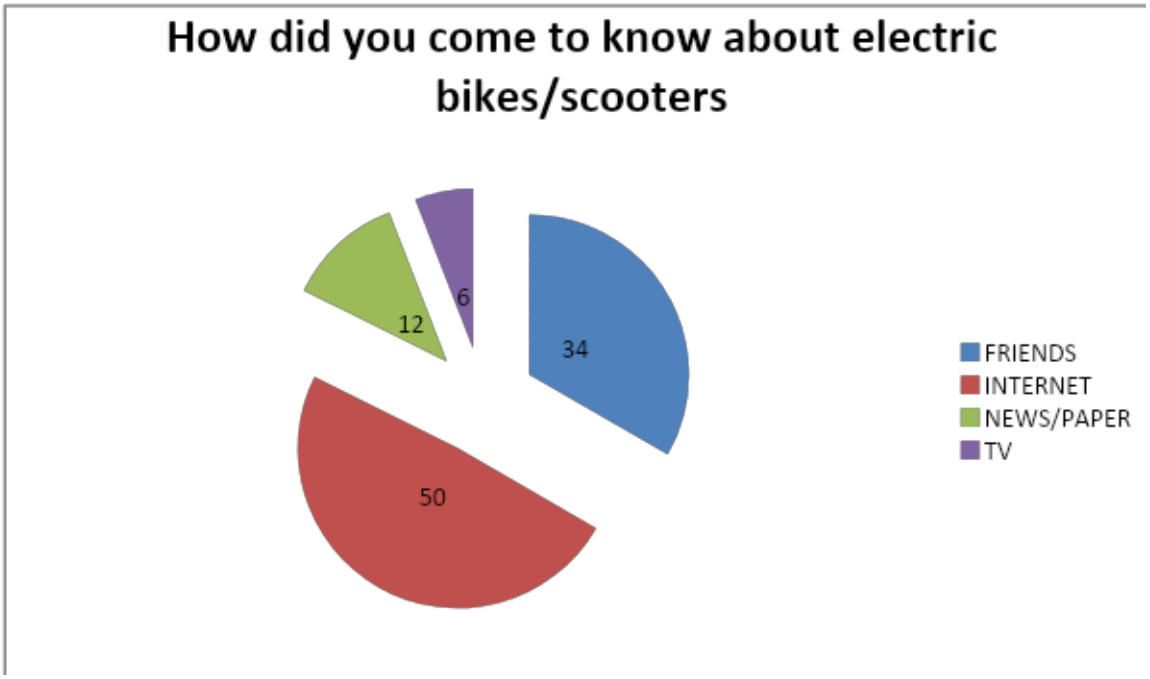


CHART NO :3.4

OBSERVATION:

From the above data, we can analyze that 50% of people have come to about E-bikes/scooters through INTERNET. The next 34% of them have come to know through FRIENDS. The other category has come to know through NEWSPAPER which corresponds to 12%. The last group has come to know through TV which leads to 6%.

TABLE NO :3.4

HOW DID YOU COME TO KNOW ABOUT ELECTRIC BIKES/SCOOTERS?	NO.OF.RESPONDENTS	PERCENTAGE
FRIENDS	72	32.29%
INTERNET	104	46.64%
NEW/PAPER	23	10.31%
TV	11	4.93%
NOT ANSWERED	10	5.83%

TOTAL	220	100%

3. HAVE YOU SEEN THE ADVERTISMENT OF E-BIKES/SCOOTERS?

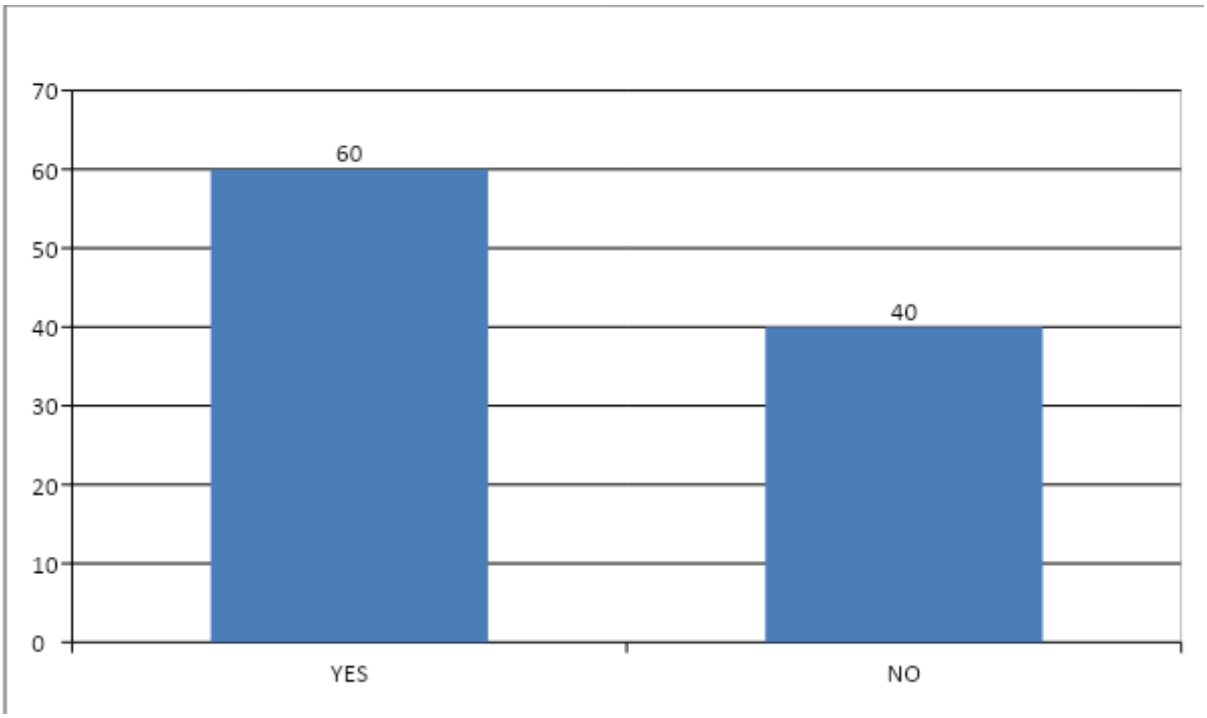


CHART NO :3.5

HAVE YOU SEEN THE ADVERTISMENT OF E-BIKES/SCOOTERS?	NO.OF.RESPONDENTS	PERCENTAGE
YES	133	60.99%
NO	87	39.01%
TOTAL	220	100%

TABLE NO :3.5

OBSERVATION:

From the above diagram, we come to know that 60% of people have seen the advertisement of E-bikes/scooters and 40% people have not seen the

advertisement. To make people aware of the E-bikes/scooters we must provide certain advertisement campaign.

4. HOW WILL YOU RATE YOUR LEVEL OF AWARENESS TOWARDS ELECTRICBIKES/SCOOTERS?

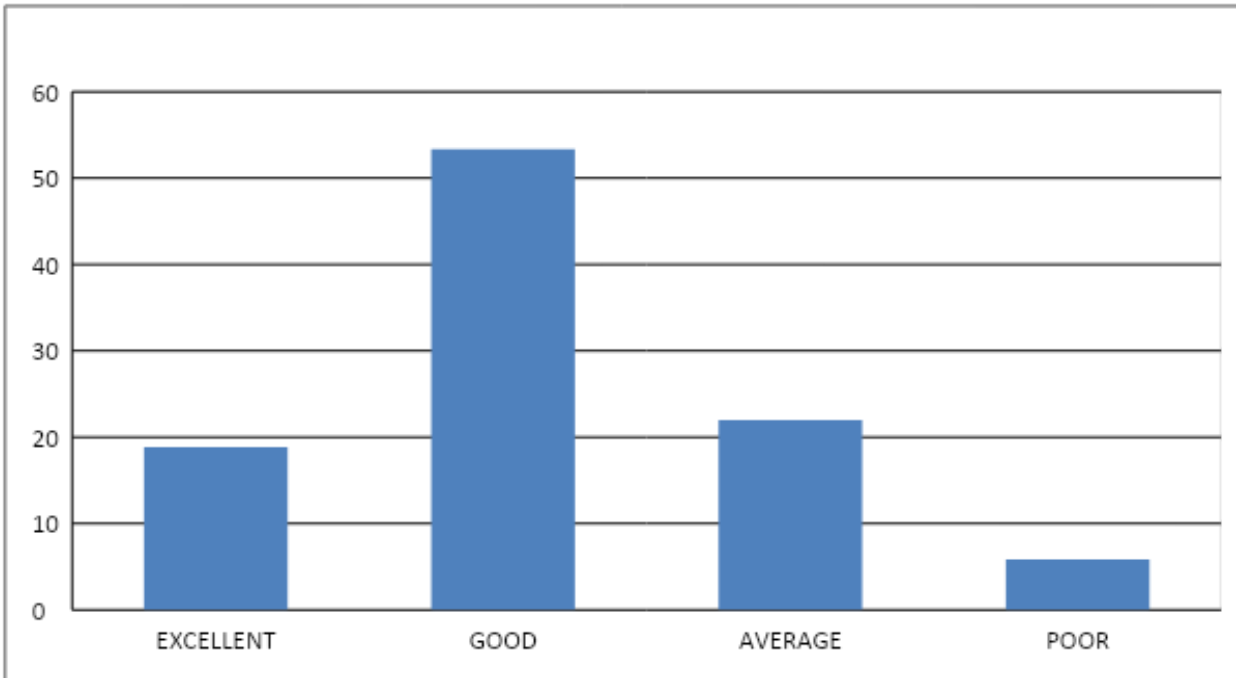


CHART NO :3.6

OBSERVATION:

This crux signifies that More than Half of the people have rated GOOD as they are known about E-bikes/scooters. The next 30% of people have rated EXCELLENT because they have well knowledge about E-bikes/scooters. The other half of the people have rated average and poor in knowing about the E-bikes/scooters.

. HOW WILL YOU RATE YOUR LEVEL OF AWARENESS TOWARDS ELECTRICBIKES/SCOOTERS?	NO.OF.RESPONDENTS	PERCENTAGE
EXCELLENT	42	18.83%
GOOD	119	53.36%
AVERAGE	49	21.97%

POOR	10	5.83%
TOTAL	220	100%

TABLE NO :3.6

5. WHICH BIKE ARE YOU USING PRESENTLY?

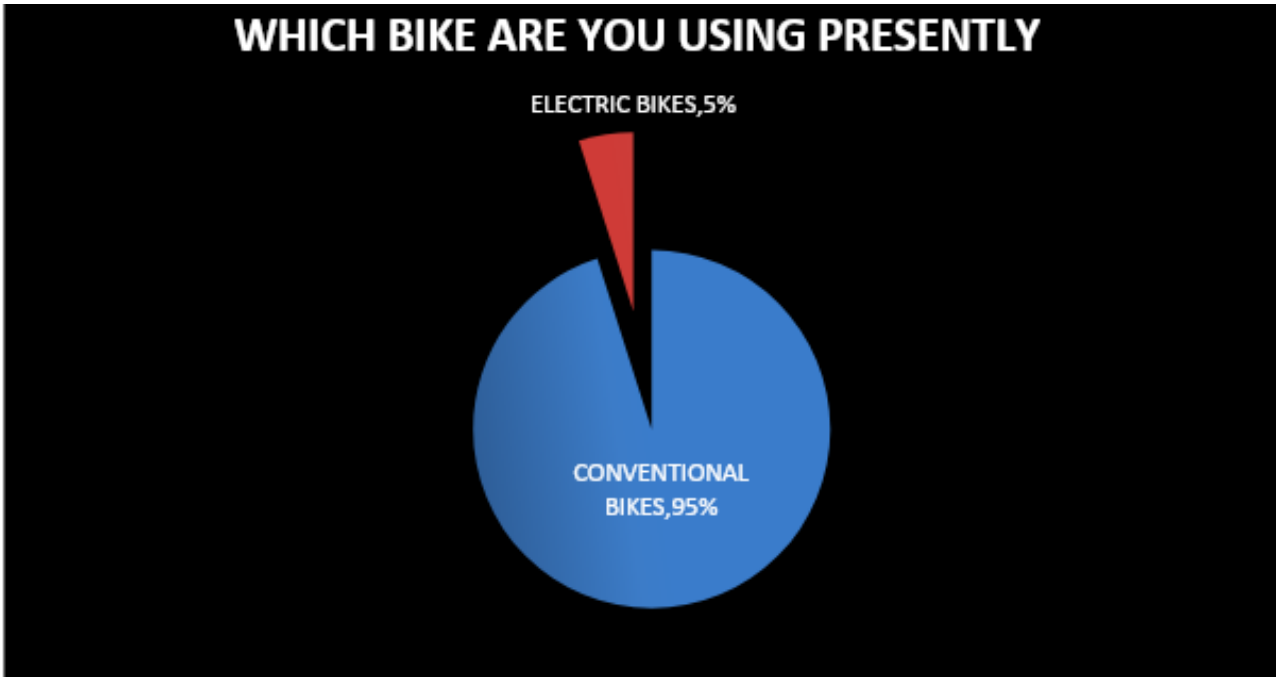


CHART NO :3.7

OBSERVATION:

According to the above diagrammatic presentation, we can signify that 95% of people are using conventional bikes and only 5% of people are using electric bikes. This is just because most of the people are not aware of the E-bikes/scooters.

TABLE NO :3.7

. WHICH BIKE ARE YOU USING PRESENTLY?	NO.OF.RESPONDENTS	PERCENTAGE
CONVENTIONAL BIKES (MOTORBIKE OR SCOOTER)	210	95.07%
ELETRIC BIKE	10	4.93%

TOTAL	220	100%

6. WHAT ARE THE E-BIKE/SCOOTER MANUFACTURES YOU KNOW ?

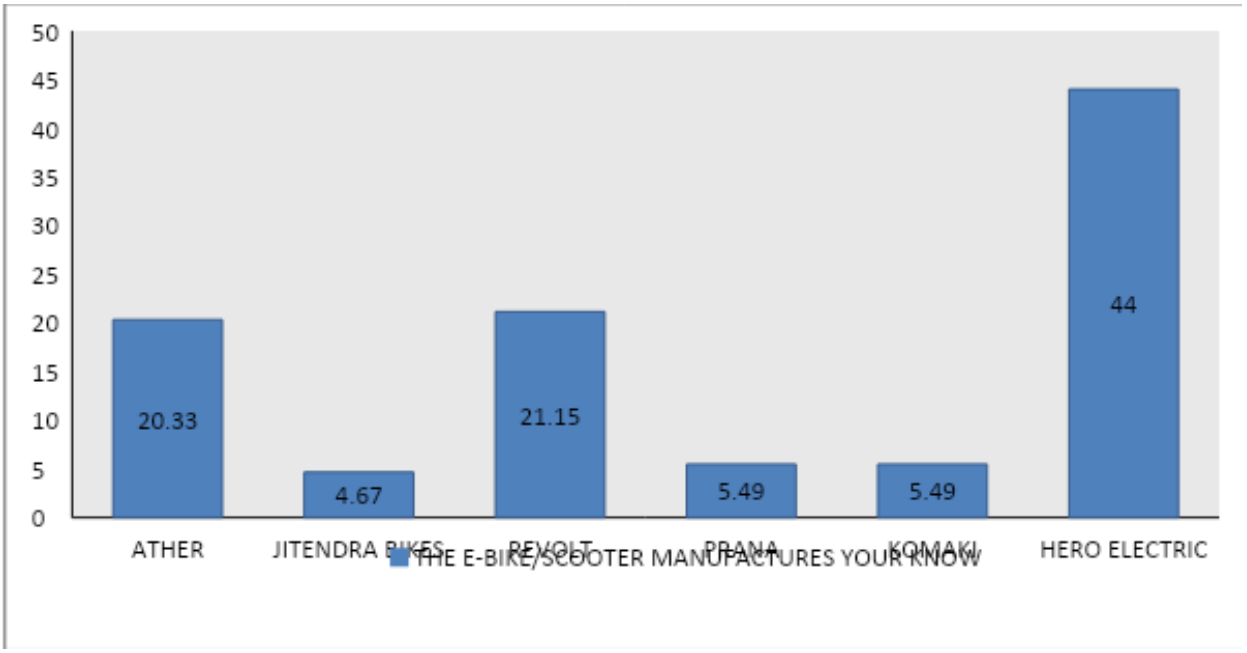


CHART NO :3.8

OBSERVATION: The above diagram signifies that most of the people are aware about the HERO ELECTRIC BIKE (i.e44%), the second group of people know about REVOLT (i.e 21%), the third group of people are those who know about ATHER E-BIKE (i.e 20%), the othergroups of people are less aware about E-bikes/scooters.

TABLE NO :3.8

WHAT ARE THE E-BIKE/SCOOTER MANUFACTURES YOU KNOW ?	NO.OF.RESPONDENTS	PERCENTAGE
ATHER	74	20.33%
JITENDRA BIKES	17	4.67%

REVOLT	77	21.15%
PRANA	20	5.49%
KOMAKI	20	5.49%
HERO ELECTRIC	153	42.86%
TOTAL	220	100%

7. WHAT FEATURES YOU WOULD LOOK WHILE PURCHASING AN E-BIKES ?

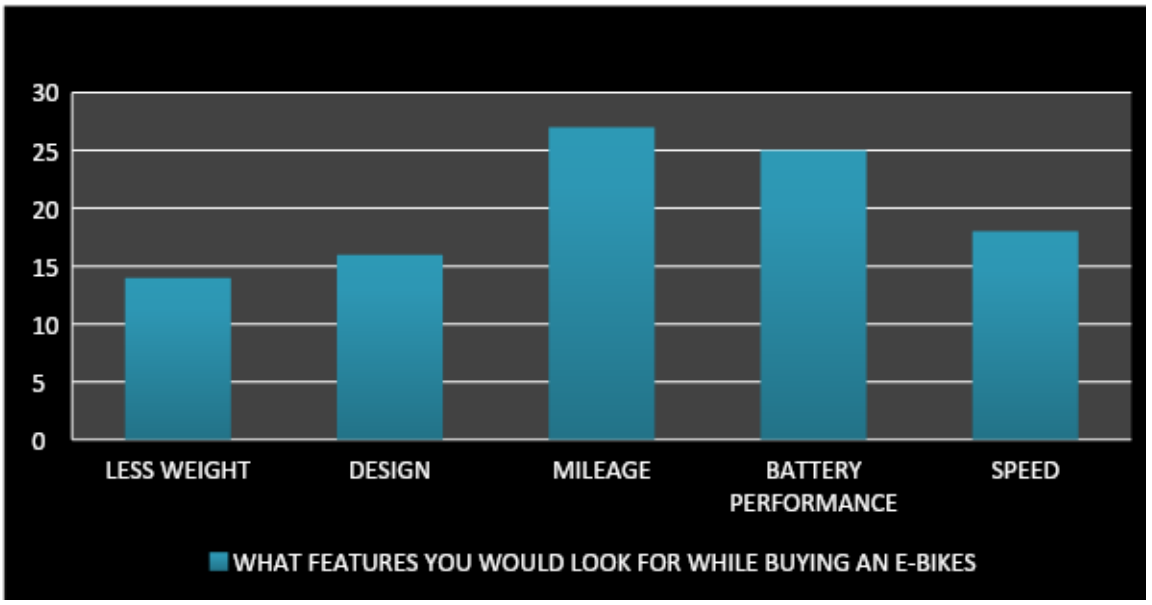


CHART NO :3.9

OBSERVATION:

From the above figure, we can predict that that 27% of people prefer mileage as a feature for purchasing an E-bike. The next comes the battery performance which is preferred by 25% of people as tool of purchase for an E-bike. 18% of people prefer speed has an feature of purchase for an E-bike , whereas others prefer for less weight and design.

. WHAT FEATURES YOU WOULD LOOK WHILE PURCHASING AN E-BIKES ?	NO.OF.RESPONDENTS	PERCENTAGE
LESS WEIGHT	85	15.045
DESIGN	91	16.11%
MILEAGE	150	26.55%

BATTERY PERFORMANCE	140	24.78%
SPEED	96	17.52%
TOTAL	220	100%

TABLE NO :3.9

8. HOW WOULD YOU RATE E-BIKE/SCOOTER IN COMPARISON WITH CONVENTIONAL BIKES?

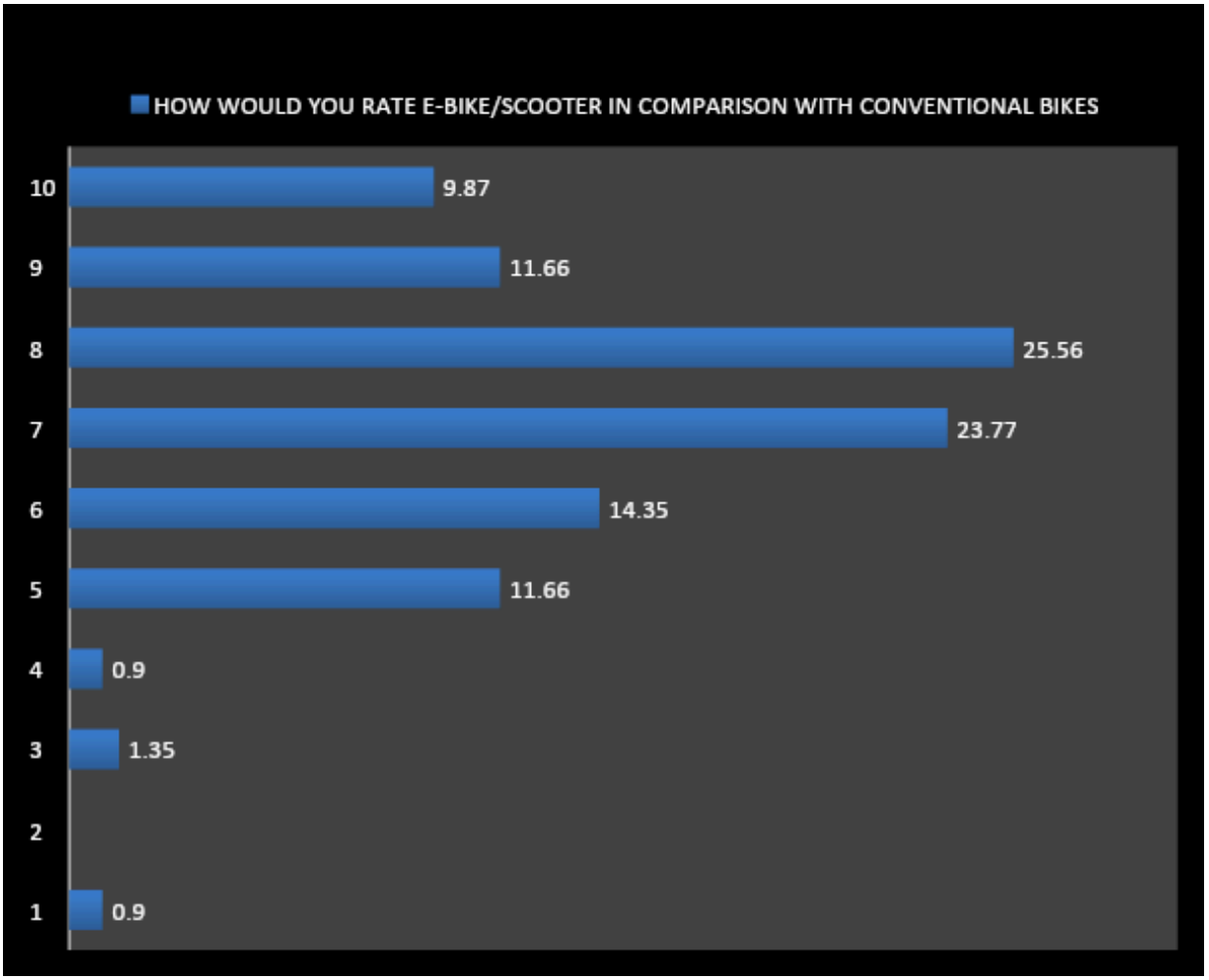


CHART NO :3.10

OBSERVATION:

Most of the people are very much convenient with conventional bikes than E-bikes. As people are not very much aware about E-bikes so they are less interested in it.

9. WHICH OF THE FACTORS DO YOU THINK THAT PREVENTS YOU FROM MAKING THE DECISION OF PURCHASING THE E-BIKES/SCOOTERS ?

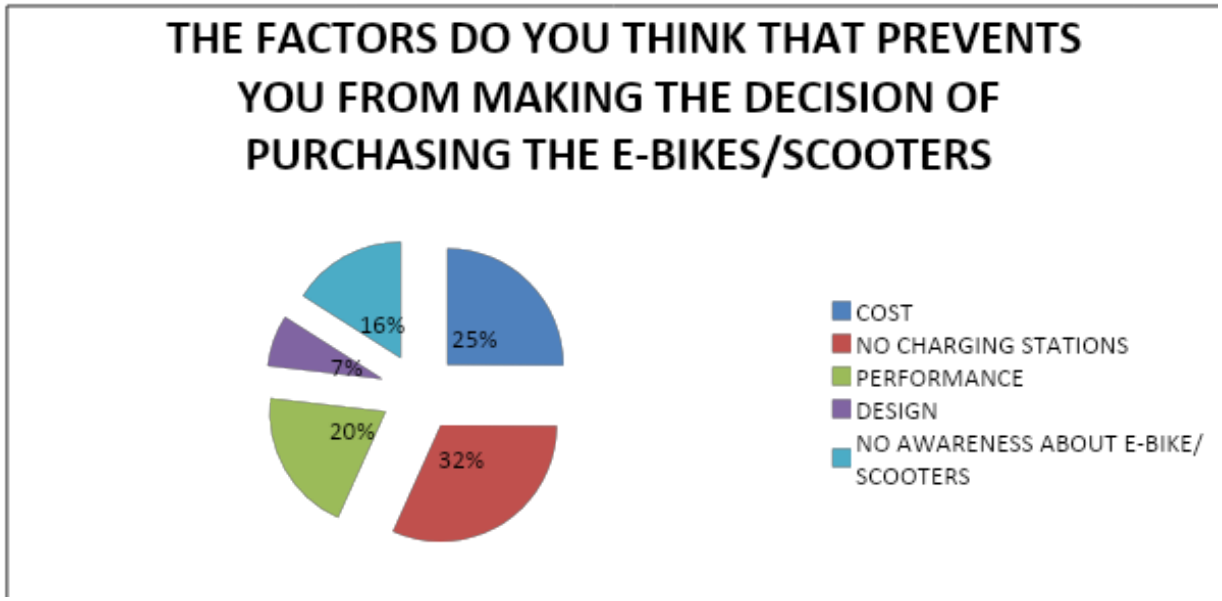


CHART NO :3.11

OBSERVATION:

This diagram explains that NO CHARGING STATIONS is the main factor which prevents people from purchasing E-bikes/scooters which contributes to 32%. The next factor which prevents people not to purchase is COST which contributes to 25%. PERFORMANCE (20%) is also a factor which prevents people from making purchase of an E-bikes. The last but the least factor is the DESIGN which also prevents people from purchasing an E-bikes.

TABLE NO :3.11

CHOICES	NO.OF.RESPONDENTS	PERCENTAGE
COST	91	25.07%
NO CHARGING STATIONS	115	31.68%
PERFORMANCE	70	20.11%
DESIGN	26	7.16%

NO AWARENESS ABOUT E-BIKES	58	15.98%
TOTAL	220	100%

10. HOW MUCH ARE YOU CONVINCED ABOUT THE BENEFITS OF E-BIKES/SCOOTERS ?

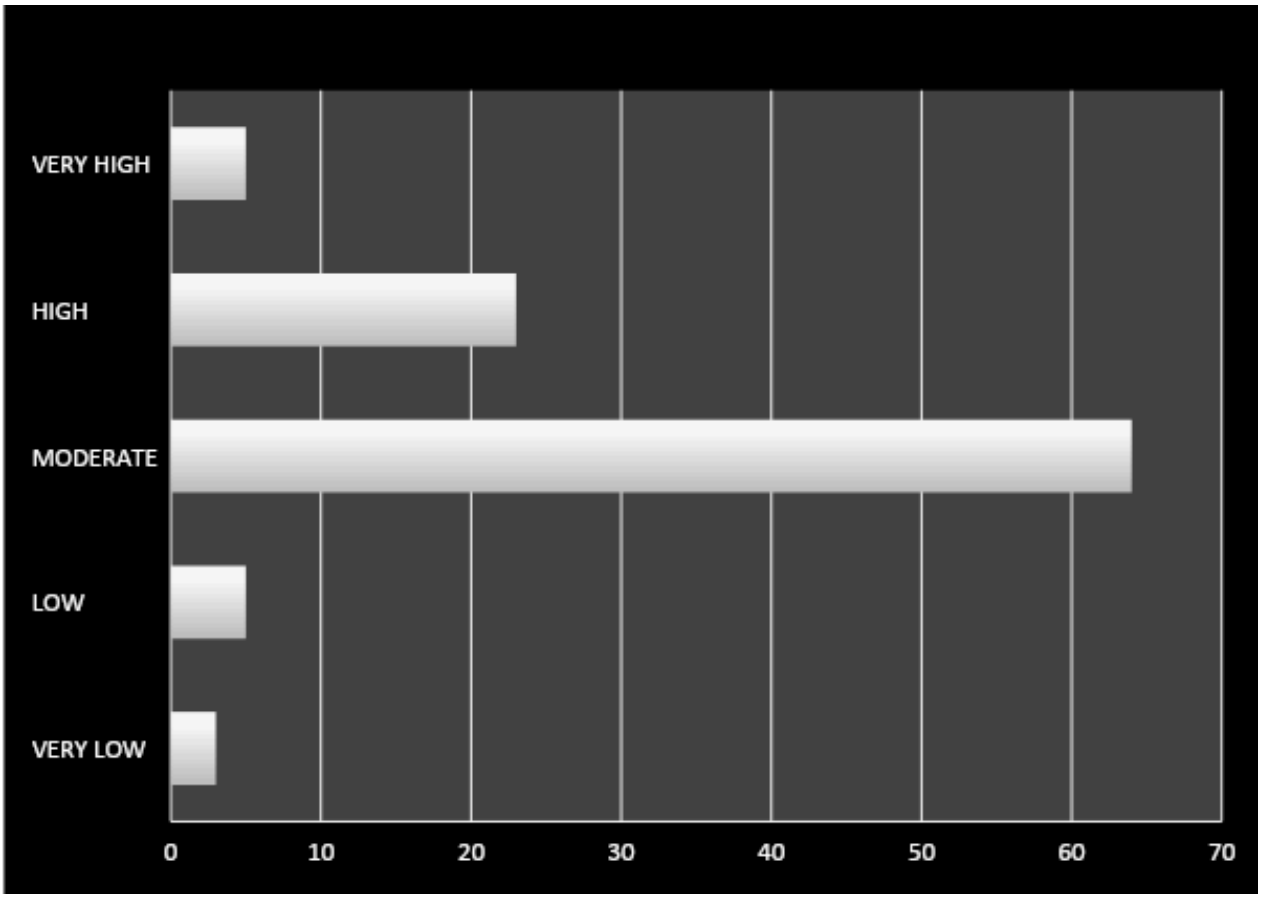


CHART NO :3.12

OBSERVATION:

According to this diagram, we can signify that 64% of people are Moderately satisfied with the benefits of E-bikes, whereas 23% people are Highly satisfied with the benefits offered by E-bikes. 3% of people say that they are very lowly satisfied with the benefits. Other two groups that is Low satisfied people and Very Highly satisfied people contribute 5% to the benefits offered by E-bikes/scooters.

11. HOW LIKELY YOU WOULD SUGGEST AN E-BIKES/SCOOTER TO YOUR FRIEND?

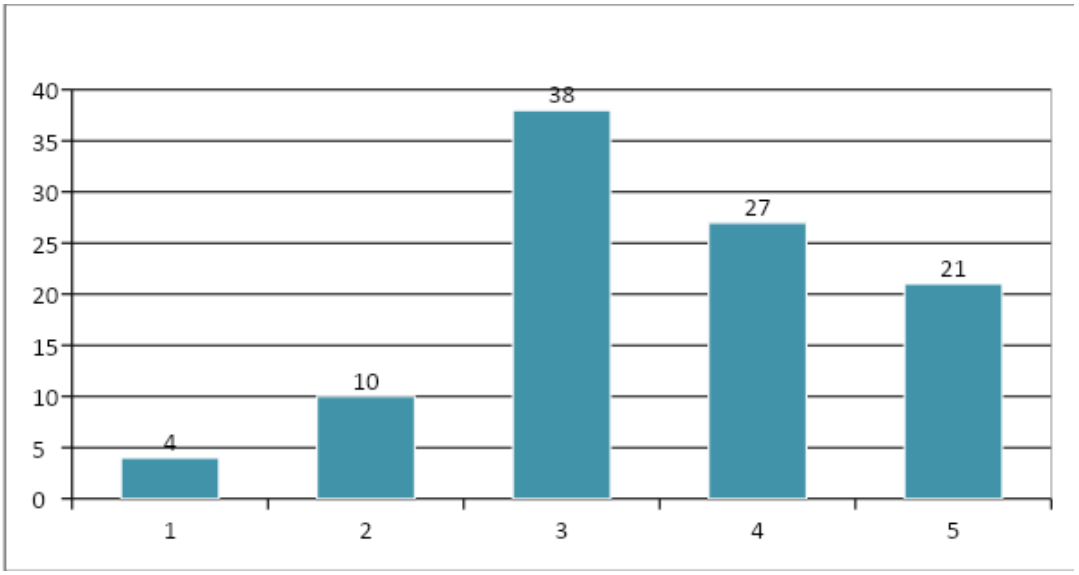


CHART NO :3.12

OBSERVATION:

The above diagram explains that 38% of people have Moderately suggested E-bike to their friends. Some people have given an High(27%) suggestion about E-bikes to their friends. But only 4% of people have suggested Very low to their friends because they may have been not aware or satisfied with benefits.

CHOICES	NO.OF.RESPONDENTS	PERCENTAGE
1	8	3.59%
2	22	9.87%
3	87	39.01%
4	60	26.91%
5	43	20.63%
TOTAL	220	100%

TABLE NO :3.12

12. WHAT IS YOUR SOURCE OF FINANCE?

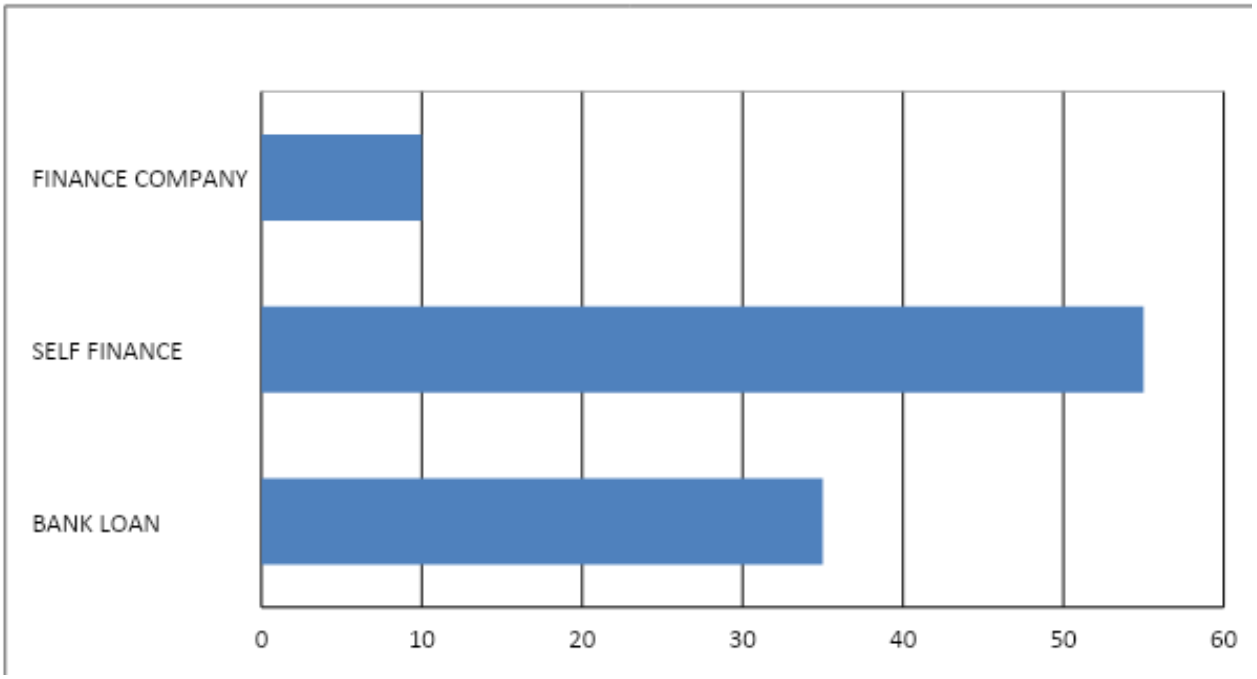


CHART NO :3.13

OBSERVATION:

According to the above diagram, we can say that Self finance is the source which is preferred by people for purchasing an E-bike which corresponds to More than half of the percentage (I,e 55%). The other 35% corresponds to Bank loan and the Remaining 10% prefers an finance company for purchasing an E-bike.

INFERENCE

The findings from our marketing research were quite interesting, that is it was totally contradicting whatever we expected. Based on the survey conducted we expected that people would prefer more conventional bikes but the result was not to our appeal it was totally against our expectations

As mentioned above people still prefer conventional bikes more than electronic bikes, the main reason is that there is no proper establishment for charging points to refill the battery for electronic bikes and it's also a time consuming process.

While purchasing an E-bike/scooter people look upon some features for it such as:- MILEAGE which is an important tool which is looked upon by many people. And other features like Battery performance, Speed, Design, Less weight, etc. are also looked upon by many people.

As a source of finance, most of the people prefer SELF-FINANCE as a tool for purchasing an E-bike/scooters. While others people prefers for an bank loan and finance company.

CHAPTER-5
ANNEXURES

QUESTIONNAIRE SURVEY ON

IMPACT OF ELECTRIC MOTORCYCLES

PART-A: PERSONAL INFORMATION :

1) Gender :

- □ Male
- □ Female

2) What is your income level ?

- □ 10K-20K
- □ 20K-40K
- □ 40K-60K
- □ Above6000
- □ Student

PART-B: ELECTRIC MOTORCYCLES :

1) Are you aware about E-bikes ?

- □ Yes
- □ No

2) How did you come to know about electric bikes/scooters?

- □ Friends
- □ Internet
- □ New/paper
- □ Tv

3) Have you seen the advertisment of E-bikes/scooters ?

- □ Yes
- □ No

4) How will you rate your level of awareness towards eletricbikes/scooters ?

- □ Excellent
- □ Good
- □ Average
- □ Poor

5) Which bike are you using presently ?

- □ Conventional bikes (Motorbike or scooter)
- □ Eletric bike

6) What are the E-bike/scooter manufactures you know ?

- □ Ather
- □ Jitendra bikes
- □ Revolt
- □ Prana
- □ Komaki
- □ Hero electric

7) What features you would look while purchasing an E-bike?

- □ Less weight
- □ Design
- □ Mileage
- □ Battery performance

- □ Speed

8) How would you rate E-bike/scooter in comparison with conventional bikes ?

- □ 1 to 10

9) Which of the factors do you think that prevents you from making the decision of purchasing the E-bikes/scooters ?

- □ Cost
- □ No charging stations
- □ Performance
- □ Design
- □ No awareness about E-bikes

10) How much are you convinced about the benefits of E-bikes/scooters ?

- □ Very high
- □ High
- □ Moderate
- □ Low
- □ Very low

11) How likely you would suggest an E-bikes/scooter to your friend ?

- □ 1 to 5

12) What is your source of finance ?

- □ Finance compancy
- □ Self finance and Bank loan

CHAPTER-6
BIBLIOGRAPHY

REFERENCE AND INPUTS WERE TAKEN FROM THE FOLLOWING WEBSITES :

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- **www.slideshare.net**
- **www.siberesearch.org**
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