International Journal of Commerce and Management Research
www.managejournal.com
ISSN: 2455-1627
Received: 15-04-2023, Accepted: 30-04-2023, Published: 15-05-2023
Volume 9, Issue 3, 2023, Page No. 42-44

A study on consumers perception towards E-vehicle Bike with special reference to Coimbatore District

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Abstract
As the demand of vehicles is increasing with high speed that exigency of vehicles even raises the need of non-renewable fuel resources it have the right to improve the standard to living but at the same time to the responsibility to hunt for an alternative which will stabilize demand and ensue to make the environment pollution. To make our environment better electric vehicles has been introduced. Electric vehicles are believed to be an effective solution for reducing greenhouse gas emission. The purpose of this report is to describe the benefits and challenges of an electric vehicle and explain why the electric vehicle is better than the gasoline powered vehicle.

Keywords: consumer attitudes, online food delivery service, consumer preferences, mobile application

Introduction
Since the appearance of the internal combustion engine towards the end of the 19th century and specifically its installation and use in wheeled automobiles, motorbikes have been creating pollution as a result of their emissions to the environment. To overcome these issue electric vehicles has been introduced. Electric vehicles are believed to be an effective solution for reducing greenhouse gas emission. Hybrid and electric vehicles have gained significant popularity over past few years they are generally believed to be a greener solution compared to their gasoline peers. It is well known that vehicle emissions are responsible for large amounts of greenhouse gas production and are leading contributors toward smog given general air pollution. Customers as a whole are starting to be more environmentally aware of the problems. Bike manufacturers around the world have been developing new technologies to promote the usage of electric vehicles to provide adequate electricity to e-bike, considerable amount of charging stations might need to built.

Objective of the study
- To know the consumers awareness on E- bike
- To find out the benefits of having an electric bike.
- To know the consumer perception and purchase intention of electric bike.
- To study the preference of respondents while purchasing
- convention vehicle and E- bike
- To identify the measures taken by the government to promote electric mobility.

Statement of the problem
- The major challenge is costs. Battery is expensive, and because batteries in electric bikes need to be able to hold massive amounts of charge to make the bikes practical for most drivers,.
- Because electric bikes cost a lot to build, they also cost more than comparable gasoline bikes to buy.

Scope of the study
- To demand E-Bike increasing the high speed the exigency vehicles even raises the need of non renewable fuel resources.
- We have the right to improve the standard of living but at the same time it is responsibility to hunt for alternative which will stabilize demand and ensue make the environment pollution free.
- So With various innovations in the automotive industry the electric bikes are introduced to the automobile market.

Limitations of the study
- The study is limited to South Coimbatore city only and therefore the results cannot be generalized.
- The study has been restricted to 110 respondents due to the time
- The study being primary one the accuracy and reliability of data depends the information provided by the respondents.
- The respondents views and opinion may hold good for time being and may vary in future.

Review of literature
Chakra borty, A. (2022) has opined that renewable source of energy is very much important and it plays an important role in transmission of this energy to various forms by using different power electronic equipment.
Burke, A. (2021) in his exploration found out that micro porous bikebons are very much used in bikebon electrodes and organic electrolytes, which are fabricated for ultracapacitors, an important component in the engine of electric vehicles.
Allcott, H. and N. Wozny. (2020) have inferred in their research that fuel price and vehicle markets are dependent on each other. More of consumers have become very sensitive to fuel price and this is a great opportunity for the electric vehicle companies. TekTjing Lie, Krishnamachar Prasad, Ning Ding. (2019) have illustrated in their research

that electric vehicles are very efficient as far as fuel economy, power electrics, energy storage and greenhouse effect is concerned.
Monica B Ashok (2018) has suggested in constraints.
her research that an important aspect of protection of environment is sustainability. She also opined that in order to raise an awareness among the people for using more and more environment friendly vehicles, Govt should give more and more subsidy.
Adepetu, A.Keshav, S. (2017)have found out in their research that the consumers are little bit skeptical about the price of these fuel efficient vehicles and the adoption of such vehicles may be slow.

Research methodology
Area of study
The research has taken in Coimbatore.

Period of study
The research was conducted during period of February to April 2023

Sampling design
The survey not taken from entire population there were only a few units of population under the study for considered for analysis, it is called sampling. For the present study the population size is infinite the adoption of sampling method was inevitable. The sampling plan consists of sample units sample size and sampling method.

Sample size
The sample size refers to the number of item to be selected from the universe to constitute a sample. A sample of 110 respondents was taken for the study.

Source of data
Primary data
Primary data consists of collection original primary data collected by the researcher

Secondary data
Secondary data are those data that have been collected by someone else and which have already been passed through the statistical process. For this study secondary data was collected through various sources such as magazines, internet, and company report and business journals.

Statistical tools
It is of no use of collecting the data unless it is tabulated properly to interpret it with a view to arrive at certain logical and meaningful conclusions. Use of the charts, pie-diagrams, etc. has been made with a view to present data pictorially, precisely and to make the study more interesting and easily comprehensible.
The following tools used representing and analyzing data.

- Simple percentage analysis
- Chi-Squire Analysis

Table 1: Relationship between the age and the income level

S. No	Relationship between the age and income level	less than 10,000	10,001 -20.000	20.00135,000	Above 35,000	Total
1.	19-25	17	8	18	5	48
2.	26-40	8	6	12	2	28
3.	41-50	4	8	7	2	21
4.	Above 50	7	2	4	-	13
	GRAND TOTAL	36	24	41	9	110

Table 2

Factors	Degree of freedom	Table values	Calculated values	Relationship
Age And Income Level	9	16.92	0.984148	No significance

Aim
To find out the relationship between the age and the income level.

Testing hypothesis
Null hypothesis (Ho)
There is no significant relationship between the age and the income level.

Alternate hypothesis (Ha)
There is significant relationship between the age and the income level.
Chi square test = $\sum$ (Oij-Eij) 2/Eij
Oij - observed frequency
Eij - expected frequency
Calculated value = 0.984148

Degree of freedom
=(C-1) (R-1)
= (4-1) (4-1)
=3*3
=9
Table value = 16.92
The table value of 8 degree of freedom at 0.05 level of significance is 16.92.
Therefore 16.92>0.984148

Result
Null hypothesis accepted because the calculated value is less than the table value so, it is concluded that there is no significant relationship between the age and the income level.

H0: There is no significant relationship between the opinions of the respondents towards gender Vs which brand to the respondents

H1: There is a significant relationship between the opinions of the respondents towards gender Vs which brand to the respondents

Table 3

Gender/ which brand	OLA	Bajaj Chetak	TVS iqube	Others	Total
Male	19	44	15	22	100
Female	2	3	0	5	10
Total	21	47	15	27	110

At 1% significant level the degree of freedom is given by Formula $^{\chi 2}= \sum (Oi-Ei)^2/Ei$.
O = Observed Frequency
E = Expected Frequency
V = Degrees of freedom
R = Row
C = Column

Calculation
Degree of freedom= (r-1)* (c-1)
= (2-1). (5-1)
= 1*4= 4
The table value is 9.49 Calculated value is 6.73

Result
As the calculated value is less than the table value H0 is accepted and hence it is concluded that there is no significant association between the opinion of the respondents towards gender and which brand prefers to the respondents

Result and Discussion
- The study exhibits that Majority 61% of the respondents are aware through advertisement
- Majority 37% of the respondents had dissatisfied with price of e-bike.
- Majority 45% of the respondents said highly satisfied to performance hero duet
- Hence the Majority 31% of respondents are using OLA E-bike
- Majority 46% of the respondents say good Majority of the respondents 43% were business men.
- Majority 31% of the respondents belong to the age group of 26-40
- Majority 38% of the respondents said using the vehicle for business purpose
- Majority 36.3% of the respondents are said available of spare parts for e-bike
- Majority 48% of the respondents are said satisfied with the cost the spares of hero duet since it is reasonable
- Majority 35% of the respondents said normal With availability of service facility
- Majority 37% of the respondents felt that the mileage was Normal
- Majority 38% of the respondents are said maintenance cost as reasonable
- Majority 55% of the respondents are said no problematic the maintenance problem in the vehicle is high
- Majority 51% of the respondents said good for free service in warranty period
- Majority 62% of the respondents are said satisfied with brand image
- Majority 60% of the respondents are said were recommend the vehicle to others
- Majority 36.3% of total respondents felt the style Majority 36% of the respondents are engaged in Business
- Hence the majority 42% of the respondents are residing in urban area.
- Majority of the respondents 42% of 5 respondents earn around Rs.20,00135,000

Suggessions and recommendations
1. Charging stations should be available at an interval of 5-10 km.
2. Government should provide more incentives so that everyone afford to purchase an electric vehicle.
3. Electricity should be made available to the areas having power shortage so that the Consumers can charge their batteries at home.
4. Encourage EV manufacturers to design vehicles with changeable batteries so that owners can just move in the charging station replace his battery with fully charged battery and move on.

Conclusion
Based on the analysis, electric vehicle manufacturers and the Government of India have to invest more in social acceptance of the vehicle by creating more infrastructural facilities, high capacity batteries, putting more thrust on technology that can create trust in consumers. The result clearly illustrates that the population is well aware of the environmental benefits. Because environmental sustainability is one of the major concerns to be addressed and electric vehicles would ultimately aid in achieving the same as the bikebon emissions from electric bikes is almost 90% lower than conventional bikes. Apart from manufacturers, Government should strive hard to spread awareness about EVs and influence positive perceptions among potential customers**.** E-Bike could be a better alternative to fuel based automobiles to mitigate air pollution.

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