



# A STUDY OF CONSUMER PERCEPTION ON GREEN VECHILES IN INDIAN AUTOMOBILE SECTOR

**Ms. Shashi Kumari, Research Scholar, Faculty of Management, Jagan Nath University, Jhajjar.**

## **Abstract:**

The purpose of this paper is to examine the varied effects of green technologies on consumer purchasing decisions. The researcher employed frequency distributions, correlation analysis, and regression analysis to anatomically analyze the primary data in this chapter to achieve the goal. The Indian vehicle industry, particularly the two-wheeler category, has seen a significant transformation from previous times, when two-wheelers were dominated by scooters and motorcycles were the odd ones out there on the road. Consumer behavior has evolved dramatically over the years, and it has grown even more dynamic, with changes occurring daily, as a result of this. As a result, vehicles businesses need to understand the influence that customer behavior has on their marketing plans and tactics. The absence of the same may result in a potentially hazardous scenario

**Keywords:** Consumer, behavior, two - wheeler, green technology, automobile industry.

## **Introduction:**

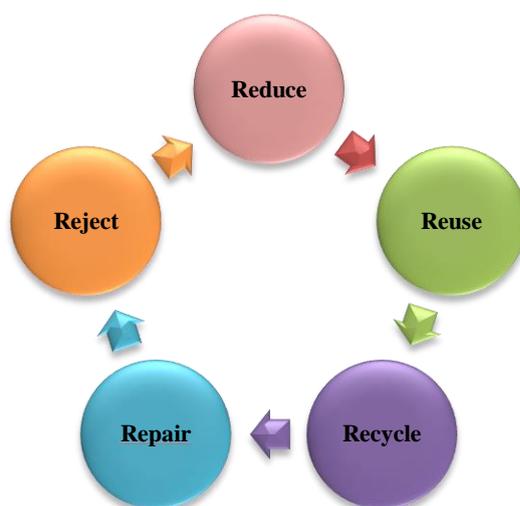
Research on the influence of customer behavior on marketing strategy across various manufacturers within a city has been restricted to a few numbers of researchers yet. There's been no investigation into the problem, particularly about Bajaj Auto. The existing research not only looks into various elements of customer behavior and marketing tactics, but also looks into the influence of these factors on the marketing techniques of Bajaj, Hero, and TVS automobiles. A correlation between consumer behavior and marketing techniques in Bajaj, Hero, and TVs was discovered in the study, and based on the findings, suggestions are made to the Bajaj Auto marketing division in Jaipur for implementing appropriate actions for the company to improve its brand image, thereby increasing their overall market share in the market. A key economic engine in India is the car industry. It accounts for about 5% of India's GDP, which is about USD 38 billion in today's dollars (GDP). Regarding the automobile industry, India ranks sixth in terms of market size, behind only China, the United States,

Japan, Germany, and Brazil. Auto components and accessories are included in the market as well as automobiles and two-wheelers. According to sales volume growth, India is predicted to rank third in the global vehicle industry by 2015. The automobile industry now accounts for 5% of the country's GDP. Auto industry growth is forecasted to reach USD 145 billion by 2016, accounting for 10% of the GDP, as per the government's "Automotive Mission Plan 2016" (Wikipedia 2015: Economy of India).

COVID-19 has a significant impact on India's transportation and allied vehicles businesses in the immediate and medium future. With a broad variety of innovative technology and practices, India's transportation sector may save 1.7 gigatons of CO<sub>2</sub> cumulative emissions & avert nearly 600 million metric tons of oil equivalent in fuel use between now and 2030. With energy storage, renewable energy, and flexibility, it is possible to dramatically reduce power expenses. There are numerous opportunities in the transportation sector, such as expanding non-motorized transportation, improving public transportation, reducing vehicle miles traveled by working from home whenever possible, and supporting national plans to implement electric vehicles in the passenger and freight segments. The Faster Adoption & Industrial of Electric Vehicles (FAME) II scheme (Exhibit 2), "which supports the adoption of 7k electric buses, 5 lakh electric three-wheelers, 55k electric passenger cars, & 10 lakh electric two-wheelers, has been launched by India in the last five years to advance the country's transition to clean energy and mobility (Exhibit 2)". Where should the goals of economic recovery & health take precedence in the wake of COVID-19, and how can India promote its clean energy agenda?

In the 2020–21 fiscal year, auto sales may fall by much as 45 percent. With an 18 percent drop in worldwide EV sales expected in 2020, EV manufacturing might be disrupted in the near term. This is due to weaker demand and supply-chain disruptions. In the near run, governments & early adopters in nations like India, where electric vehicles adoption has been sluggish, might experience stronger sales of EVs than the average, according to their projection. Other adjustments may occur in the electric vehicle industry. For example, there's also a strong desire for more cheap electric vehicles. A change in customer tastes might have an impact on investment and vehicle choices for firms. Restoring vehicle levels of conventional and electric cars ultimately be dependent on the resurrection of demand, the reactivation of the supply chain, and the availability of a skilled labor force.

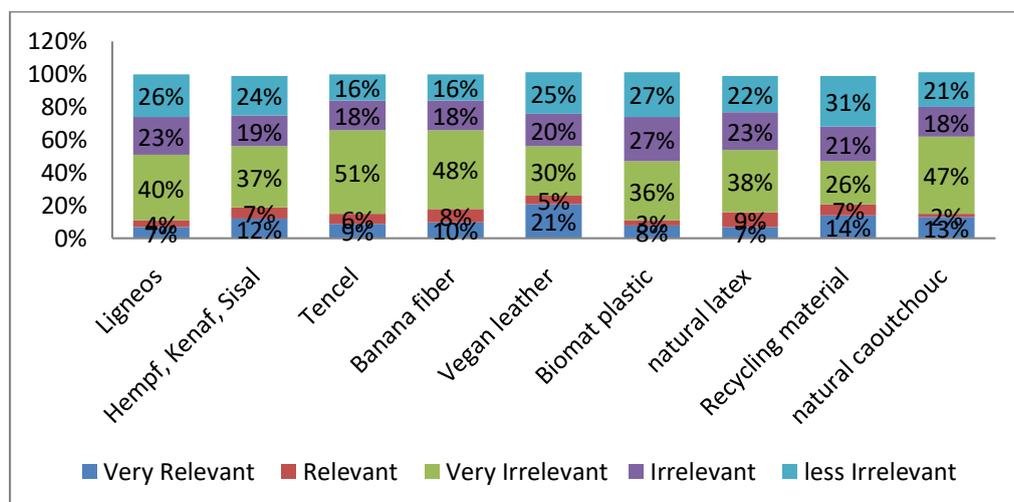
### Green Marketing Process



**Figure 1: Green Marketing Process**

The study focused on a single topic, and that would be to determine the degree of client knowledge about environmentally friendly automobiles to conduct the study. An understanding of the issue and the findings of the research should assist marketers and policymakers in devising tactics that would encourage people to purchase environmentally friendly vehicles and help preserve the environment. Prospective buyers who visit the dealers' showroom for a test drive or to make a purchase in Mumbai, Pune, and other small towns and villages have been requested to complete a questionnaire to determine their level of knowledge about the environment-friendly automobile on the market. By developing and successfully introducing vehicles in the market, it is hoped that consumer behavior may be altered to be less ecologically detrimental and hence more profitable for vehicles businesses. The private sector has a significant role to play in this strategy. Through the usage of new vehicles and services, it is possible to offer alternate consumption patterns to individuals.

### Relevance of the Natural Alternative Material in Automobiles



**Figure 2: Relevance of the Natural Alternative Material in Automobiles**

### Objectives of the Study

Understanding customer behavior is critical for any commercial activity, but it is more critical if the vehicle

is intended to have an impact on the environment. The study will be mainly concerned with determining the relationships between customers' views, knowledge, and attitude, as well as their vehicle purchase and usage behavior, as well as the priority that consumers place on the environment while purchasing the vehicle. This study's goal is to learn more about how buyers feel about ecologically friendly cars. The purpose of this research was to determine whether or not consumers were aware of the study and whether or not this knowledge influenced their purchasing decisions.

### **Green Purchasing Behavior**

Consumer purchasing behavior is regarded as an indiscernible piece of marketing, and Kotler and Keller (2011)<sup>1</sup> define it as "the study of the methods for buying & abandoning vehicles, beliefs, or come upon by people, gatherings, and organizations to fulfill their needs and requirements." Consumer purchasing behavior is defined as "the study of the techniques for purchasing & abandoning vehicles, beliefs, or come upon by people, gatherings, and organizations to fulfill their needs and requirements. The green customer is often defined as someone who adopts ecologically friendly activities and/or who prefers to purchase green items over conventionally manufactured alternatives. Green customers are much more tightly regulated on the inside because they recognize that they may have a significant impact on environmental protection as individuals. This leads them to feel that environmental protection should not be placed only in the hands of environmentalists and government officials. Instead, everyday people who can have an influence should be included in the process. They are also less opinionated, and instead are more open to or accepting of new vehicles and ideas than previous generations. Their open-mindedness allows them to recognize environmental-friendly items and behaviors even more quickly. Green buying is becoming more important in society as a result of the increased interest among consumers around the globe in environmental conservation. The majority of people are worried about the need for environmental conservation to preserve their own lives as well as the lives of others. There is a significant relationship between the factors contributing to buying behavior and green product.

- There is a significant impact of green technologies on consumer buying behavior.
- There is a significant relationship between green products and purchasing behavior of green products.
- There is a significant relationship between Green Price and purchasing behavior of green product.

When it comes to a customer's purchase, gender is extremely important. In most homes, men have traditionally played an active part in making purchases for the family. However, in recent years, women have become economically empowered as a result of social developments. Women are gradually gaining the upper hand when it comes to making family purchases. Even though women are in a stronger position when it comes to buying, the majority of males have retained their influence over the family's purchases. Human nature is never satisfied with what is available; his or her demands are extremely strong, and he or she is constantly

anticipating more and more. This behavior is consistent across all car models available on the market. As a result, car models and features must be updated regularly. Every three months, the automobile industry releases a new model of the vehicle as a result, it's critical to research and comprehends consumer behavior about items. questionnaire. The sample Correlation and Regression will be used to analyze the data. The regression will be used an analyze data. This is a descriptive as well as an exploratory study of an existing and evolving situation. The current Indian market is the ideal area to learn about customer behavior. The companies constantly evaluate the customer's perception of the brand/product, as well as the customer's demands and requirements. After analyzing and comprehending the customer's requirements, the corporation determines what to do to meet the customer's needs. Companies can also use this study to determine their weaknesses, strengths, market position, future advancement, and improvements in the company's work practices and operations. When a consumer buys and uses a product, the customer's pleasure or discontent is determined by how often the customer uses the product, which determines whether the customer rejects the product or buys it again. The process of purchasing a car is more complicated than purchasing other things because it is a long-lasting and luxurious item. To collect data, consumers of all ages will be given a structured

### **Regression**

It is applied when we wish to forecast the value of a variable based on the value of another variable. The variable we aim to forecast is termed the dependent variable (or occasionally, the outcome variable) (or sometimes, the outcome variable). The variable we are using to forecast the other variable's value is termed the independent variable (or occasionally, the predictor variable) (or sometimes, the predictor variable).

### **Correlation**

Correlation is a statistical approach for determining the strength of a relationship between two variables or the degree of linkage between them.

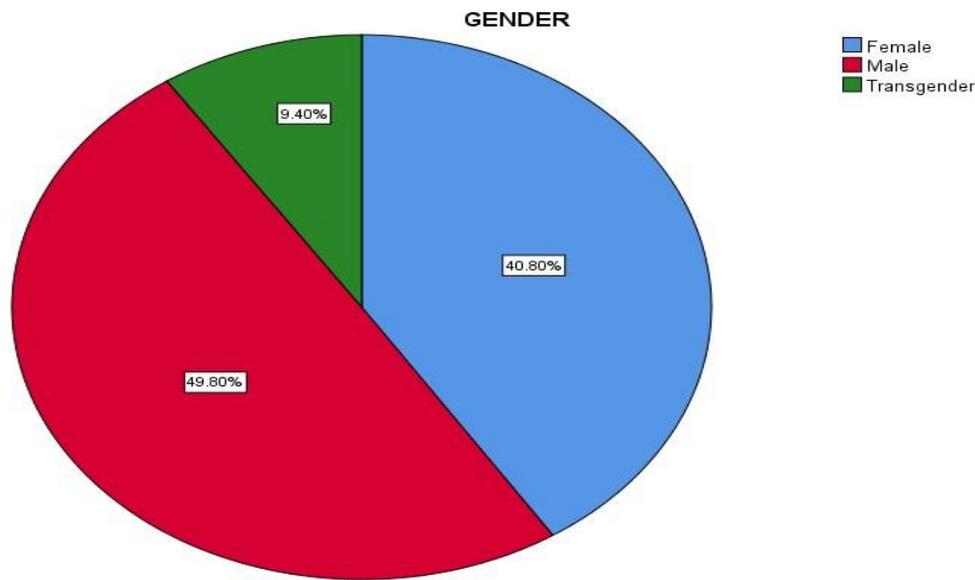
### **Demographic Details of the Customers**

The demographic information is an important part of the relationship marketing process since it allows the marketing firm to deploy appropriate methods. In particular, Gender, Age, Education, Marital status, Employment, and monthly income play a vital role in ascertaining the characteristic features of customer buying behavior towards green technologies automobiles. The current research also aims to discover client categorization groupings based on demographic variables.

**Table 1: Gender of Respondent**

GENDER
--------

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	<b>Female</b>	204	40.8	40.8	40.8
	<b>Male</b>	249	49.8	49.8	90.6
	<b>Transgender</b>	47	9.4	9.4	100.0
	<b>Total</b>	500	100.0	100.0	



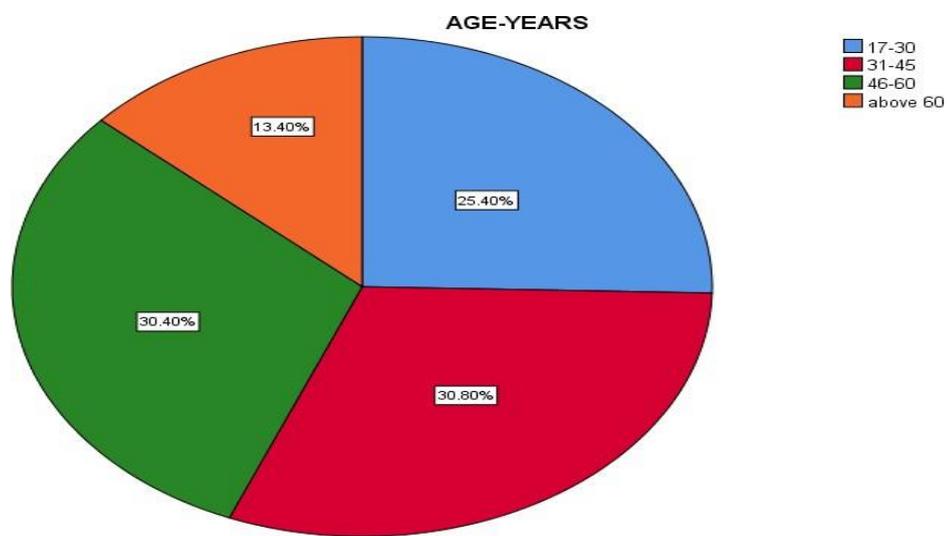
**Figure 3: Gender of Respondent**

In the above table 1 and pie chart (figure 3), we define the Gender of the Respondent. In which, females are 40.80%, males are 49.80% and transgender are 9.40%.

**Table 2: Age- years of Respondent**

AGE-YEARS
-----------

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17-30	127	25.4	25.4	25.4
	31-45	154	30.8	30.8	56.2
	46-60	152	30.4	30.4	86.6
	above 60	67	13.4	13.4	100.0
	Total	500	100.0	100.0	



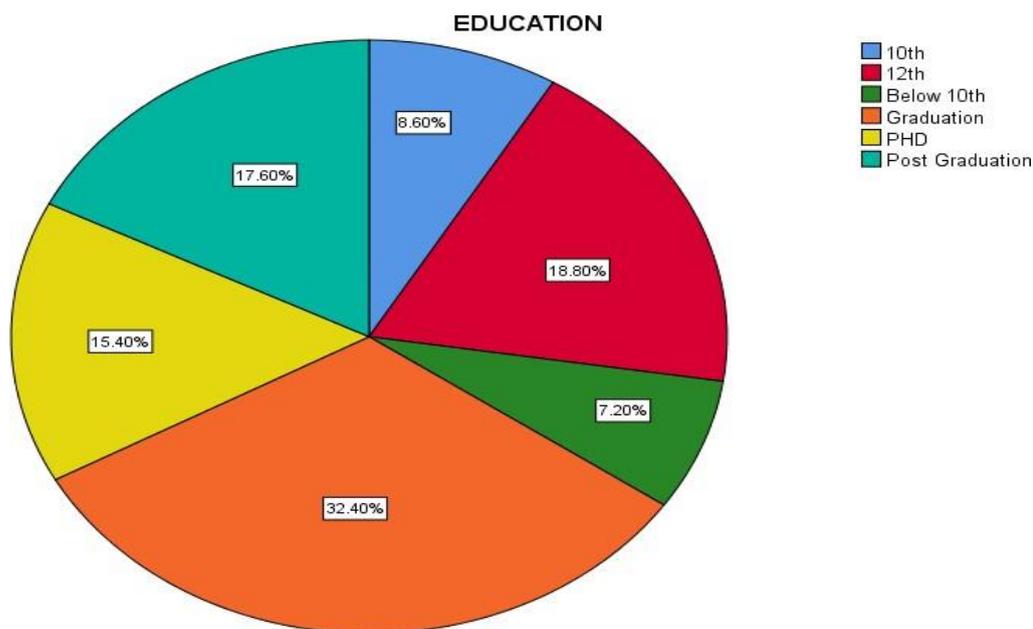
**Figure 4: Age- years of Respondent**

In the above table 2 and pie chart (figure 4), we define the age group of respondents. In which, 17-30 age-years are 25.40%, 31-45 age-years are 30.80%, 46-60 age years are 30.40%, above 60 age years are 13.40%.

**Table 3: Education of Respondent**

EDUCATION
-----------

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10th	43	8.6	8.6	8.6
	12th	94	18.8	18.8	27.4
	Below 10th	36	7.2	7.2	34.6
	Graduation	162	32.4	32.4	67.0
	PHD	77	15.4	15.4	82.4
	Post-Graduation	88	17.6	17.6	100.0
	Total	500	100.0	100.0	



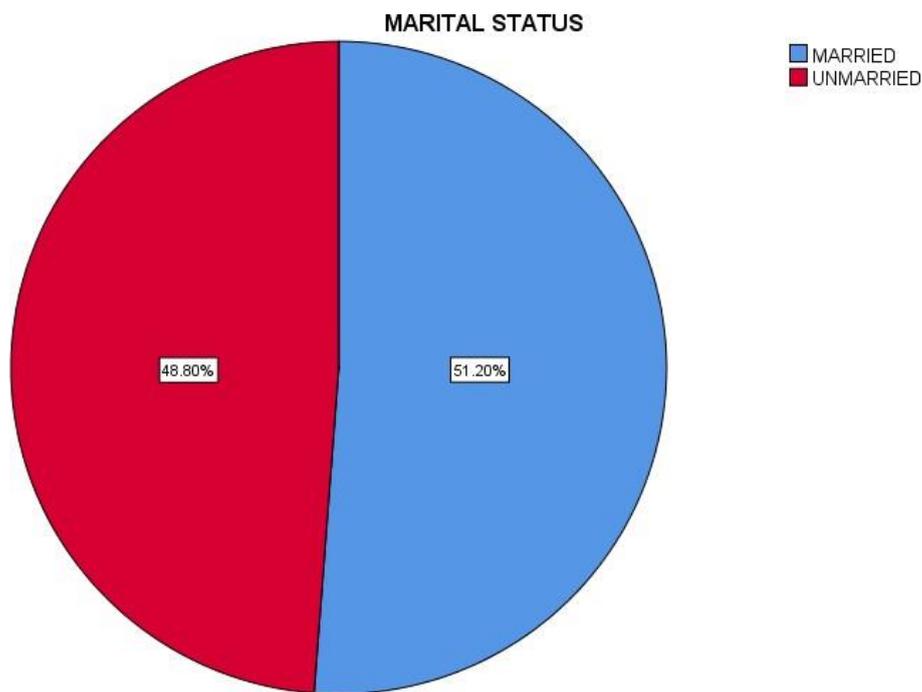
**Figure 5: Education of respondent**

In the above table 3 and pie chart (figure 5), we define the education of the Respondent. In which, 10<sup>th</sup> class students are 8.60%, 12<sup>th</sup> class students are 18.80%, below 10<sup>th</sup> class are 7.20%, graduation students are 32.40%, PHD students are 15.40%, post-graduation students are 17.60%.

**Table 4: Marital Status of respondent**

MARITAL STATUS
----------------

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	256	51.2	51.2	51.2
	Unmarried	244	48.8	48.8	100.0
	Total	500	100.0	100.0	

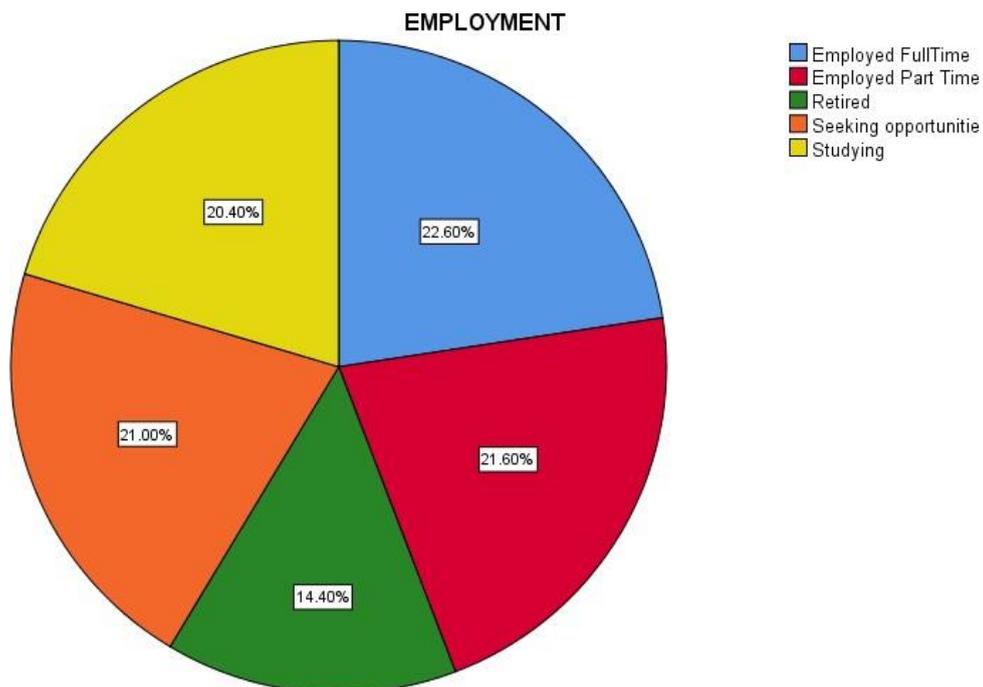


**Figure 6: Marital Status of respondent**

In the above table 4 and pie chart (figure 6), we define the marital status of the Respondent. In which married is 51.20% and unmarried is 48.80%.

**Table 5: Employment of respondent**

EMPLOYMENT					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed Full Time	113	22.6	22.6	22.6
	Employed Part-Time	108	21.6	21.6	44.2
	Retired	72	14.4	14.4	58.6
	Seeking opportunities	105	21.0	21.0	79.6
	Studying	102	20.4	20.4	100.0
	Total	500	100.0	100.0	



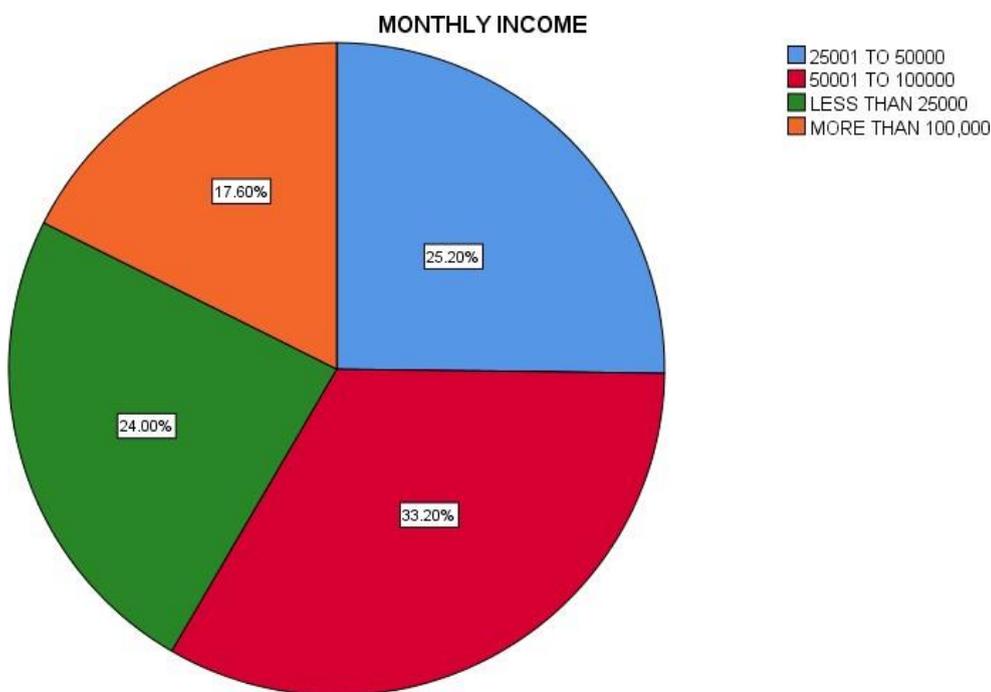
**Figure 7: Employment of respondent**

In the above table 5 and pie chart (figure 7), we define the employment of respondents in which employed full time is 22.60%, employed part-time is 21.60%, retired is 14.40%, seeking opportunities is 21.00%, studying is 20.40%.

**Table 6: Monthly income of the respondent**

MONTHLY INCOME
----------------

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25001 TO 50000	126	25.2	25.2	25.2
	50001 TO 100000	166	33.2	33.2	58.4
	LESS THAN 25000	120	24.0	24.0	82.4
	MORE THAN 100,000	88	17.6	17.6	100.0
	Total	500	100.0	100.0	



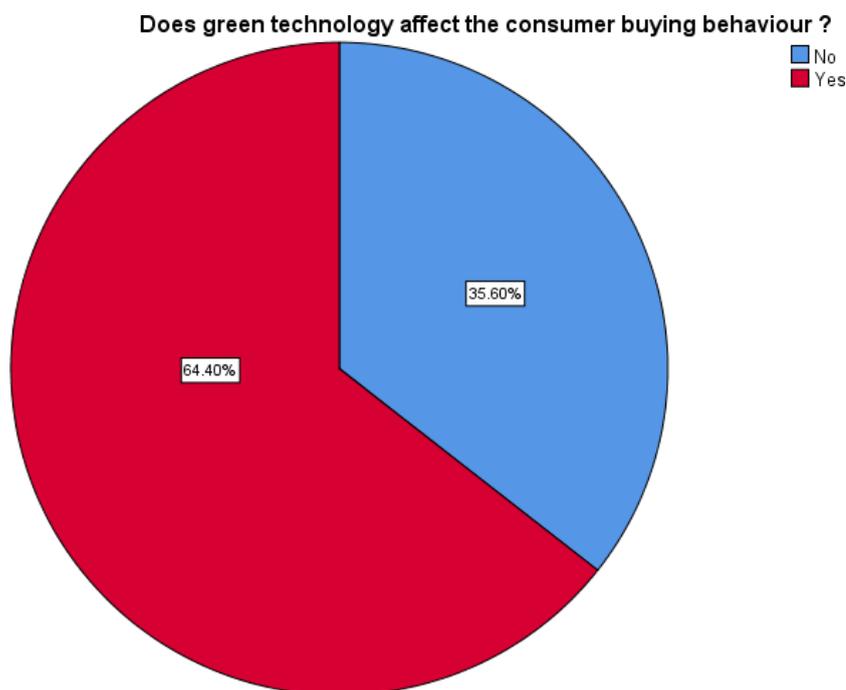
**Figure 8: Monthly income of the respondent**

In the above table 6 and pie chart (figure 8), we define the monthly income of the respondents in which 25001 to 50000 are 25.20%, 50001 to 100000 are 33.20%, less than 25000 are 24.00%, more than 100,000 are 17.60%.

**Table 7: green technology affects consumer buying behavior**

Does green technology affect consumer buying behavior?
--

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	<b>No</b>	178	35.6	35.6	35.6
	<b>Yes</b>	322	64.4	64.4	100.0
	<b>Total</b>	500	100.0	100.0	



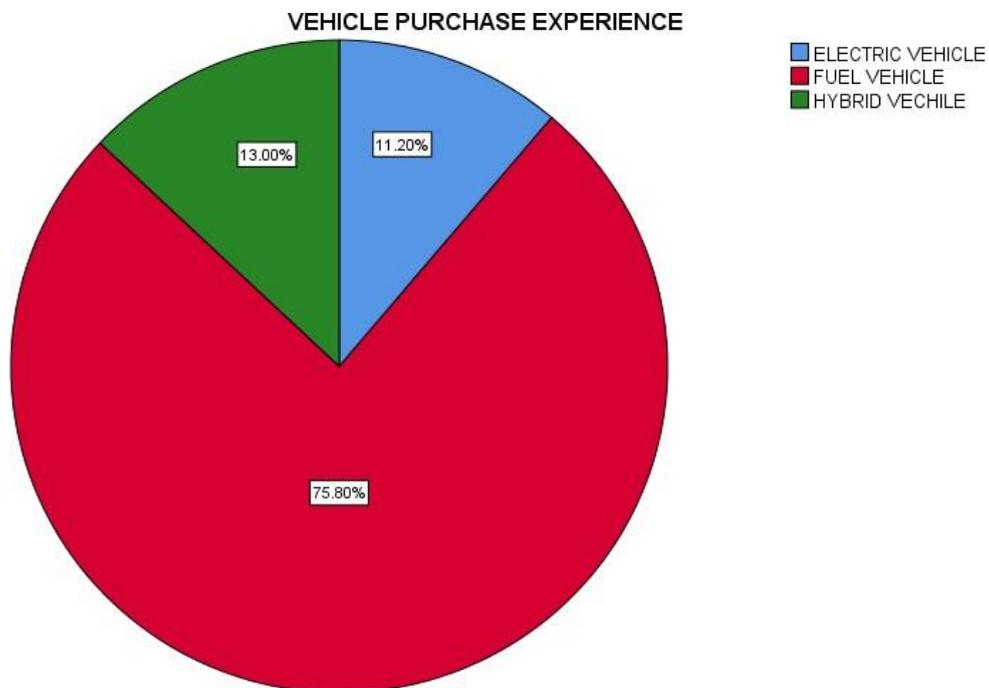
**Figure 9: Green technology affects consumer buying behavior**

In the above table 7 and pie chart (figure 9), we define green technology affects consumer buying behavior in which no is 35.60% and yes is 64.40%.

**Table 8: Vehicle purchase experience**

<b>VEHICLE PURCHASE EXPERIENCE</b>
------------------------------------

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ELECTRIC VEHICLE	56	11.2	11.2	11.2
	FUEL VEHICLE	379	75.8	75.8	87.0
	HYBRID VEHICLE	65	13.0	13.0	100.0
	Total	500	100.0	100.0	



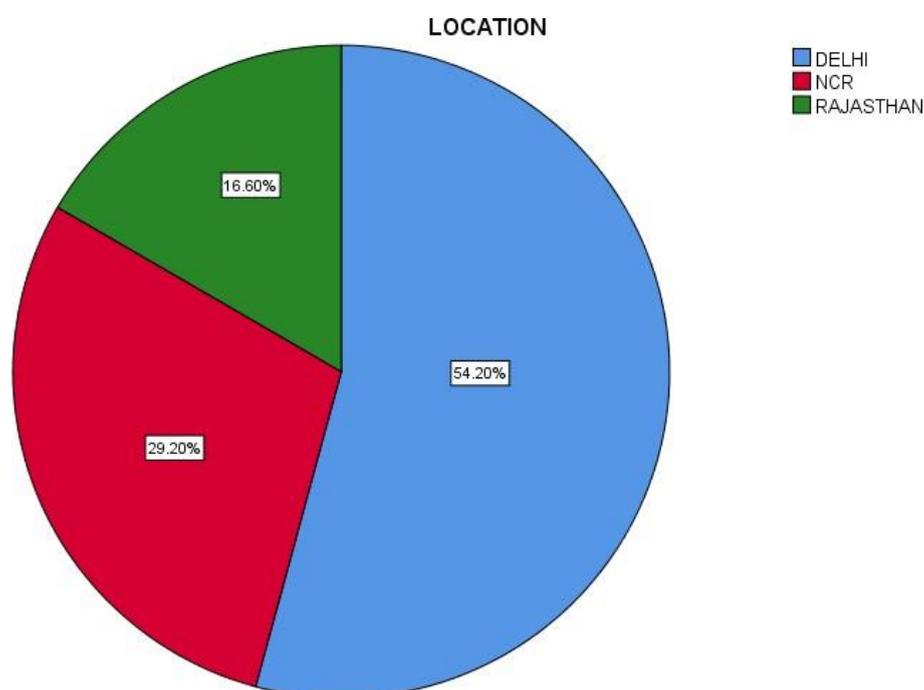
**Figure 10: Vehicle purchase experience**

In the above table 8 and pie chart (figure 10), we define vehicle purchase experience in which electric vehicle is 11.20%, fuel vehicle is 75.80%, and a hybrid vehicle is 13.00%.

**Table 9: Location**

LOCATION
----------

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	<b>DELHI</b>	271	54.2	54.2	54.2
	<b>NCR</b>	146	29.2	29.2	83.4
	<b>RAJASTHAN</b>	83	16.6	16.6	100.0
	<b>Total</b>	500	100.0	100.0	



**Figure 11: Location**

In the above table 9 and pie chart (figure 11), we define the location of the respondents in which Delhi people is 54.20%, NCR people is 29.20%, Rajasthan people is 16.60%.

### **Significance & Scope of the Study**

This research will be useful in determining the amount of customer desire to embrace green technology, as well as the consumer knowledge level and willingness to purchase electric cars. The results of this research will reveal if green technology and electric cars have a favorable or negative influence on consumer purchasing behavior. Moreover, it will give a complete examination of the variables that are motivating and deterring consumers to purchase electric cars, in addition to the expectations of customers from manufacturers & the government about electric vehicles. In a nutshell, this research aids in the understanding of the market potential for electric cars as well as the expectations of customers from manufacturers and the government. The purpose of the study is to determine the amount of consumer knowledge of environmental-friendly programs of car firms, as well as their attitudes toward purchasing environmentally friendly automobiles. The

current survey was done on respondents from Delhi and Rajasthan, and the results are shown below. It is just electric vehicles (scooters and automobiles used for personal transportation) that are included in the research. After gaining knowledge of the amount of customer awareness & perception of green activities by vehicle businesses, the findings of this research may be useful to automobile firms, marketers, and retailers in developing a successful green marketing strategy for their respective vehicles.

## **Limitations of the Study**

Despite the great burden that has been placed on the study's shoulders, it has been thoroughly investigated. A methodical strategy for conducting the research has also been taken into consideration. As with every research, this study has its drawbacks, as well.

The present study has the following limitations: -

- This study head towards on influence of green technologies on buying behavior of the respondents and the representative sample was selected from Rajasthan and Delhi only.
- Due to time and cost factors, the sample scale was limited to respondents only.
- All the fact findings and observations made in this study are immaculate based on the respondent's answers.
- The samples were selected from a particular area so that results are reliable to that place only.

## **Summary**

To determine the impact of green marketing methods used by automotive manufacturers on consumers, the researcher must first determine how "green" the customers are in terms of attitudes, knowledge, and behavior. An environmental mindset, often known as a green attitude, is defined as a person's attitude toward environmental conservation and promotion. Customer behavior scientists have long held the belief that a person's views might influence their behaviors and actions. The findings of a study and in-depth research were conducted to better understand consumer knowledge, attitude, and behavior about the environment, with a focus on the vehicle sector, and the findings are described in the following paragraphs. Customers (car owners) understand car releases are the major supplier of pollution, and that auto fuel is the primary source of emissions. People are also conscious that CNG is the most environmentally friendly automobile fuel. Most owners of cars are familiar with the term "Global Warming," but just a small percentage are familiar with the word "Green Marketing".It may be argued that while people are addressing Global Warming in many venues, Green Marketing is a new idea that few people are familiar with. Furthermore, most car buyers believe that the four-wheelers accessible in our nation are not environmentally approachable, that companies take ridiculous charges for environmentally friendly cars, and that only a small percentage of customers believe that automobile manufacturers follow green practices.The level of awareness about all aspects of green marketing is high.

## **References:**

1. Bagodi, V., & Mahanty, B. (2011). Designing and pre-testing a questionnaire for two-wheeler services. *International Journal of Services and Operations Management*, 10(3), 348-377.
2. Cuza, Alexandru. Ioan. (2011). Factors Influencing Passenger Car Consumer Behaviour and their use in the Environmental Public Policy. *Journal of Euro Economics*, London. Vol. 1, 20–26. Dr. Shinde, G. P., & Dubey, M. (2011). Automobile Industry and performance of key players. *Asian Journal of Technology & Management Research*, 1(02).
3. Ernest-Jones, M., Nettle, D., & Bateson, M. (2011). Effects of eye images on everyday cooperative behavior: a field experiment. *Evolution and Human Behavior*, 32(3), 172-178.
4. Gurleen, Kanwal., & Sukhmani. (2011). A Study on Pre- & Post Purchase Customer Behaviour for Various Car Brands in Punjab. *Journal of Radix International Educational and Research Consortium*, 1(2).
5. Hossein, Nezakati, H., Kok, K. O., & Asgari, O. (2011). Do Consumer based factors influence consumer buying behavior in automotive industry? (Malaysia Evidence). *International Proceedings of Economics Development & Research*, 10, 17-22.
6. Indushri, N. (2011). Buying Roles in the Purchase Decision Making Process of Consumer Durables. (M. Phil Dissertation) Retrieved from [www.bsauiv.ac.in](http://www.bsauiv.ac.in)
7. Ishaswini & Saroj Kumar Datta 2011, Pro-environmental Concern Influencing Green Buying: A Study on Indian Consumers, *International Journal of Business and Management*. 6(6)
8. Joseph, Ajoy. S., & Kamble, H. Y. (2011). Buying Behaviour of Passenger Car Customers towards Auto Finance - An Empirical Study. *Indian Journal of Commerce & Management Studies*, II (1), 66-74.
9. Kanwal., & Sukhmani. (2011). A Study on Pre- & Post Purchase Customer Behaviour for Various Car Brands in Punjab. *Journal of Radix International Educational and Research Consortium*, 1(2). Retrieved from <http://www.rierc.org/marketing/paper6.pdf>
10. Sathish, M., & Pughazhendi, A. (2011). A Study on Consumer Behaviour of Automobile Products with Special Reference to Two- Wheeler in Tirunelveli City Tamil Nadu, India. *Indian Journal of Applied Research*, 1 (3), 161–163.
11. Mehta, D, Jain, S & Mehta, NK 2011, 'Impact on Gender on Adolescent Consumers towards Green Products - A Study Conducted in Indore City, The Annals of the "Stefan cel Mare" University of Suceava. Fascicle of the Faculty of Economics and Public Administration, vol. 11, no. 1 (13).
12. Balakrishnan Menon, and Dr. Jagathy Raj V.P. (2011). A conceptualization of model for studying consumer purchase behavior of passenger cars. *International Journal of Research in Finance and Marketing*, 1 (5).
13. Pandya, K. (2011). Consumer Behaviour in Two-wheeler Industry. LAP LAMBERT Academic Publishing AG & Co KG.
14. Rajini G., and A. Poornima. (2011). factors influencing the purchase decision of Two-wheelers. *International Journal of Management Research and Technology*, 5 (1), 35 - 43.
15. Rahbar, E. and Wahid, N. A. (2011). Investigation of Green Marketing Tools' Effect on Consumers' Purchase Behaviour. *Business Strategy Series*, 12(2): 73-83
16. Mehrotra Rajesh; Sachin Kumar Sharma, An Empirical Study of Buying Behaviour of the two-Wheeler Users in Jaipur District *Asian Journal of Research in Marketing*, 1(5) October 2012
17. Sinnappan, P., & Rahman, A. A. (2011). Antecedents of green purchasing behavior among Malaysian consumers. *International Business Management*, 5(3), 129-139.
18. Srivastava, & Tiwari. A.K. (2011). A Journal of Behaviour of Maruti SX4 and Honda City Customers in Jaipur. *Pacific Business Review - A Quarterly Refereed Journal*, 1–10.
19. Sachdev, S. (2011). Eco-friendly products and consumer perception. *International journal of Multidisciplinary research*, 1(5), 279-287.
20. Yaacob, M. R., & Zakaria, A. (2011). Customers' awareness, perception, and future prospects of green products in Pahang, Malaysia. *The Journal of Commerce*, 3(2), 1.

21. Akber, M., and Kumar, P. (2012). Behavioral study on selected car owners in Vellore district. *Zenith International Journal of Multidisciplinary Research*, 2(3).
22. Alam, A., Almotairi, M., & Gaadar, K. (2012). Green marketing in Saudi Arabia rising challenges and opportunities, for better future. *Journal of American science*, 8(11), 144-151.
23. Arttachariya, P. (2012). Environmentalism and green purchasing behavior: A study on graduate students in Bangkok, Thailand. *BU Academic Review*, 11(2), 1-11.
24. AyselBoztepe (2012), green marketing and its impact on consumer buying behaviour. *European, Journal of Economic and Political Studies*, 5 (1).
25. Bakshi, S. (2012). Impact of gender on consumer purchase behaviour. *Journal of Research in Commerce and Management*, 1(9), 1-8.
26. AyselBoztepe (2012), green marketing and its impact on consumer buying behavior. *European, Journal of Economic and Political Studies*, 5 (1).
27. Cherian, J., & Jacob, J. (2012). Green marketing: A study of consumers' attitude towards environment-friendly products. *Asian social science*, 8(12), 117.
28. Dande, R. (2012). The rise of green advertising. *Journal of Mass Communication Journalism*, 2(133), 1-4.
29. Juwaheer, T. D., Pudaruth, S., & Noyaux, M. M. E. (2012). Analysing the impact of green marketing strategies on consumer purchasing patterns in Mauritius. *World Journal of Entrepreneurship, Management and Sustainable Development*.
30. Dr.Sardar Gugloth, and Margani Soma Sekhara. (2012). *Gobal Journal of Commerce and Management Perceptive*, 1 (2), 14 - 18.