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The client perception of electric vehicles and its impact on sales

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Abstract

Research in the field of Electric Vehicles have become a powerful report zone in recent decades and is probably going to turn out to be considerably more so as the significance of Automobiles is quickly picking up force. In this manner, understanding Electric vehicles will be seen as progressively significant. Electric Vehicles in the course of the most recent couple of years have begun assuming a significant job in the Automobile Industry. Research in the field of Client perception of Electric Vehicles is gradually picking up energy yet is as yet one of the most ignored segments in India because of the multifaceted nature in its calculation. This article targets analyzing "The Client perception of Electric Vehicles and its impact on sales.

Keywords: Client perception, electric vehicles

Introduction

Client perception

Client perception definition: "Showcasing idea that envelops a client's impression, mindfulness, or cognizance about an organization or its contributions." Client accumulates different wellsprings of data on a specific part of an item to improve thought of the item which he/she needs; this is also called client perception. At the point when a consumer investigates ads, consumer surveys, advancements, internet-based life input etcetera alluding to an item, the consumer will have a decision on the item.

The chain of procedure for client perception starts when a consumer investigates or sees the data of an item. This chain of procedure proceeds until the consumer is happy with an item. Each time when an organization makes changes in an item, it will adversely affect client perception. The items ought to be founded on hues and states of the logo, the ideal notices which are carefully assembled by retailers and give limits which it offers will have an impact on client perception.

Why is customer perception important?

A valued consumer is one who gets impacted by the experience that he has with a specific kind of an item just as administration. Client perception is the start of an encounter that the client feels about an item. Client perception will drive an individual, whether to pick or reject the brand. At the point when a client feels that their alluring items are conveyed on schedule, they will, in general, make a perception. Powerfully portraying the item can give a positive part of client perception. At whatever point a consumer is happy with the administrations given by the firm in the wake of buying an item, the consumer makes a great feeling about the brand. At the point when a consumer had a horrible assessment/experience, for example, damaged things, no profits etcetera the consumer will, in general, have a negative perception about the brand.

At the point when organizations endeavour to move in the direction of building and reinforcing the connection between the clients and the organization, the client perception steadily improves and gives an extreme superior fringe. Client perception is one of the significant viewpoints to pass judgment on the sort of picture a brand needs to construct. For instance, in a coffeehouse, the cups that are set in various racks; if the nature of those cups is not sufficient, the consumer feels that the organization is an inferior quality brand.

Nevertheless, when the cups are masterminded and are held under the lights to draw in consumers with excellent quality, the consumer constructs an alternate perception about the organization.

Client perception assumes a significant job in consumer purchasing conduct. Thus, organizations adjust to make a smooth and upbeat client experience for their clients. Organizations are prepared to put away cash and attempt to impact client perception and drive them into a productive perspective.

What are the Factors Influencing Customer Perception?

Client perception can be impacted by outer elements, some of which are recorded beneath:

1. Individual experience

Client perception is exceptionally affected by the individual experience that a client had while purchasing and utilizing a specific item. On the off chance that the quality, client assistance, value, logo, shading, limits, and so forth had the option to establish a brilliant connection with the psyches of the clients, they would assemble a decent perception of the brand. In any case, on the off chance that they did not appreciate the involvement in the brand, it will leave a never-ending impression.

2. Promoting

Clients get the chance to see the items first through promotions and accordingly become probably the most significant factor that impacts client perception. The notice and crusades that an organization runs will assist with building a positive client perception.

3. Influencers

Individuals, for the most part, purchase things when someone else has attempted and tried it. Such individuals who have gotten it first and attempted the item become influencers. At the point when individuals catch wind of the great item that the influencer has tested, it will impact the individual to get it and test it out, as the proposal has originated from a known individual whom they trust.

4. Client audits

Numerous individuals investigate client surveys before purchasing an item. This shows that client audits are a significant factor in characterizing client perception. On the off chance that the consumers see that an item has a lower number of stars, it implies that item does not have great client audits. The feeling that it makes on the consumer's psyche is negative.

5. Web-based life

Web-based life has gotten the most grounded medium to oversee client perception. At the point when internet-based life crowd gets reliable correspondence in regards to an item, the clients assemble a picture of the item. Web-based life can be utilized to post content, pictures and recordings, which assists with building the sort of perception expected by the organization.

Electric Vehicles

An electric vehicle (EV) is a vehicle that utilizes at least one electric engines or foothold engines for a drive. Usually, the term EV is utilized to allude to an electric vehicle. An

electric vehicle might be controlled through an authority framework by electricity from off-vehicle sources or might act naturally contained with a battery, sun-oriented boards, power modules or an electric generator to change over fuel to electricity. EV's have various capacities that can oblige various drivers' needs. A significant element of EVs is that drivers can connect them to charge from an off-board electric force source. This recognizes them from electric crossover vehicles, which supplement an inside burning motor with battery power, however, cannot be connected.

There are two fundamental sorts of EVs: every single electric vehicle (AEVs) and module half and half electric vehicles (PHEVs). AEVs incorporate Battery Electric Vehicles (BEVs) and Fuel Cell Electric Vehicles (FCEVs). Notwithstanding charging from the electrical lattice, the two sorts are charged to a limited extent by regenerative slowing down, which creates electricity from a portion of the vitality regularly lost while slowing down.

Every single electric vehicle (AEVs) run distinctly on electricity. Most have every single electric scope of 80 to 100 miles, while a couple of extravagance models have gone up to 250 miles. At the point when the battery is exhausted, it can take from 30 minutes (with quick charging) up to almost an entire day (with Level 1 charging) to energize it, contingent upon the sort of charger and battery.

PHEVs run on electricity for shorter extents (6 to 40 miles), at that point switch over to an inner ignition motor running on fuel when the battery is drained. The adaptability of PHEVs permits drivers to utilize electricity as frequently as could reasonably be expected while additionally having the option to fuel up with gas if necessary. Driving the vehicle with electricity from the framework lessens fuel costs, cuts oil utilization, and diminishes tailpipe emanations contrasted and regular vehicles. When driving separations are longer than the all-electric range, PHEVs act like half breed electric vehicles, expending less fuel and delivering fewer emanations than comparable customary vehicles. Contingent upon the model, the inward ignition motor may likewise control the vehicle at different occasions, for example, during fast increasing speed or when utilizing warming or cooling. PHEVs could likewise utilize hydrogen in a power device, biofuels, or another elective energizes as a back-up rather than the fuel.

Literature review

(Fanchao Liao, Eric Molin & Bert van Mee) (2017) ^[4] In their study, scholars have established that the effect of monetary and technical/mechanical qualities of EV on its usefulness is critical, together with its purchase and overhead cost, driving range, duration of the charge, the performance of the vehicle and diversity of the brand on the market.

(Bharti Motwani and Abhishek Patil (2019)) In their study, scholars have recommended that the Indian economy is at an increasing stage, and EV is an incipient concept in India. Consequently, it is compulsory to ken the progress made in this area of EV in India. Incipient technologies have made cars more utilizer-cordial in terms of ease-of-use, appealing fuel-preserving, pollution convivial and smooth navigation. The automobile (car) manufacturers should increment their efforts to do promotion predicated on the significant factors of EV. An endeavour should be made to accentuate the usefulness of EV by utilizing a felicitous advertising

program by engendering web-predicated tutorials or videos that showcase the usefulness of EV.

(Masurali, A Surya, P (2018)) In their study, scholars have established that different factors impact the client perception level on EV and out of those factors' consumers give higher preference to the maintenance cost of EV and Price of EV. Additionally, scholars have also recommended that the Government must show their support by spreading awareness and also help in cultivating a positive perception of EV among the potential buyers.

(Mifzala Ansar, Monika (2019) ^[2]) In their study, scholars have established that sustainability is the solution to critical environmental issues and the different variants of electric vehicles are the key to sustainability. They have also suggested that cab aggregators can habituate and use EV. The regime must give subsidies for the people to utilize it. In future, the regime must edify about EV and their advantages and try to penetrate EV in every household.

(Ivan K.W.Lai, Yide Liu, Xinbo Sun, Hao Zhang, Weiwei Xu (2015) ^[5]) In their study, scholars have established that concern for the environment is an emotional component which influences client perceptions (whether directly or indirectly) and this perception as an intermediary helps in linking the concern for the environment and the acceptance of electric vehicles.

(Pretty Bhalla, Inass Salamah Ali, Afroze Nazneen (2018) ^[11]) In their study, scholars have established that environmental concern, comfort, social acceptance, trust, low cost of the vehicle, infrastructure and technology are the drivers of client perception of electric vehicles.

Observation from Literature review

On a detailed study and observation of literature, the following results are established.

- The perception of the consumer is not rigid and can be changed at any point in time.
- There exists a direct relationship between the client perception of electric vehicles and their sales.

Research gap

The research in the field of automobile sector is conducted aggressively; still there is scarcely any research which concentrates on the client perception of electric vehicles. This advanced research establishes links with Client perception of electric vehicles and its impact on sales.

Research Methodology

The objective of the study: The objective of the study is to identify the impact of Client perception of Electric Vehicles on the sale of Electric Vehicles.

Variables under investigation

- **Independent variables** – Client perception
- **Dependent variable** – Sales (Purchase of EV in future)

Hypothesis

H0=There is no significant relationship between Client perception of Electric Vehicles and its impact on sales.

H1=There is a significant relationship between Client perception of Electric Vehicles and its impact on sales.

Procedure & Sampling technique - Data was collected through Google forms, which is a survey administration app. The form is framed and sent to the respondents who live in

the city of Hyderabad and Bangalore. We have decided to go for the convenience sampling technique, and the data consisted of people who own electric vehicle as well as fuel vehicle. We wanted to know whether they are willing to repurchase EV in the future and also gathered their perception about EV, and we evaluated the impact the perception makes on Sales of EV. Although it is an online survey, consumers have shared their valuable opinions and thoughts about EV directly to us. Data was collected from different age groups which included students, middle-aged group and higher working class. Respondents of age group 18 - 35 dominated the sample. One hundred fifty respondents filled the form, and the males have dominated the sample being 72%, and females were 28%.

Demographic profile of the sample

Table 1: Representing the Age group of the sample.

Age	Frequency	Percentage
18 -25	96	64%
26 -35	27	18%
36 -45	9	6%
45 & above	18	12%

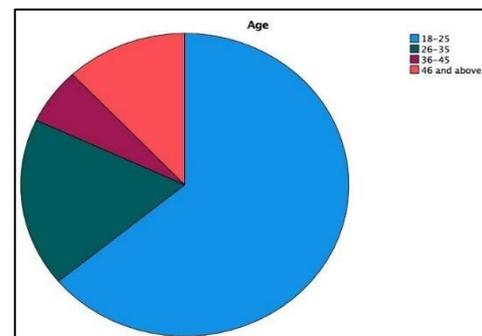


Fig 1: Pie chart indicating the percentage of respondents based on the age group

The table and pie chart show that 64% of the people are from the age group 18 –25, 18% of the people are from the age group 26 –35, 6% of the people are from the age group 36 –45 and 12% of the people are from age group 45 and above have answered the questionnaire based on the Client perception of electric vehicles and its impact on sales.

Table 2: Representing the Gender of the sample

Gender	Frequency	Percentage
Male	108	72%
Female	42	28%

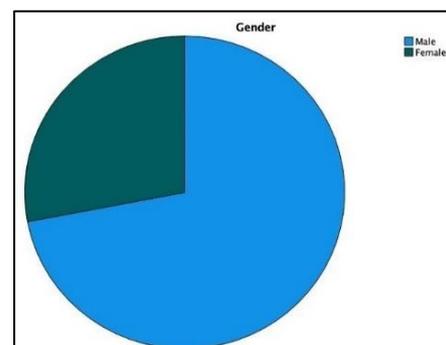


Fig 2: Pie chart indicating the percentage of respondents based on the gender

The table and pie chart show that 72% of the people are males and 28% of the people are females who have answered the questionnaire based on the Client perception of electric vehicles and its impact on sales.

Table 3: Representing the Occupation of the sample

Occupation	Frequency	Percentage
Student	69	46%
Working	33	22%
Non - working	15	10%
Self-employed	33	22%

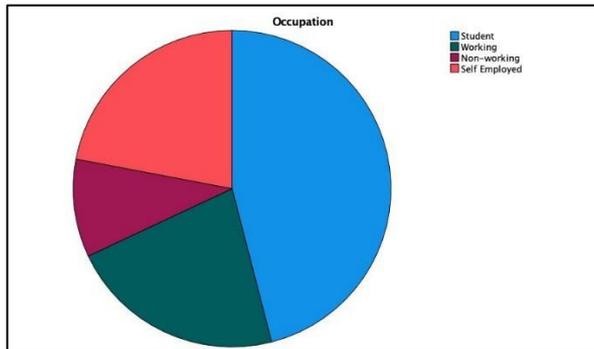


Fig 3: Pie chart indicating the percentage of respondents based on the gender

The table and pie chart show that 46% of the people are students, 22% of the people are from the working population, 10% of the people are from non – working population, and 22% of the people are self-employed who have answered the questionnaire based on the Client perception of electric vehicles and its impact on sales.

Description of the Questionnaire

A questionnaire was developed in Google forms, and it comprises 19 questions. The questions have covered different aspects - factors that affect the consumer in purchasing EV, social acceptance of EV, willingness to buy EV in future, reasons for using EV, comfortability with EV, cost of EV (Economic factor), feeling about investment on EV (good or bad), demographic factors (Age, Gender & Occupation), a satisfactory level of customers after using EV (for mileage, fulfilling their personal needs, personal rating) and their view on recharge stations available in the city of Hyderabad and Bangalore. All these aspects were taken into consideration as they lay influence on the perception of the consumer. Subsequently, the impact of client perception of EV on sales of EV was evaluated.

Data Analysis

To analyze the collected data, we have used Pearson product-moment correlation coefficient analysis in order to fulfil our objective of the research.

Table 4: Representing Pearson’s correlation coefficients between Client perception of EV and the sales of EV.

Client perception factors	Sales Correlation
Investment on EV	.750**
Comfortability	.736**
Social Acceptance	.663**
Economical factor	.600**
Availability of charge station	.475**
Personal rating	.429**
Fulfilling personal needs	.218
Mileage factor	.160

** . Correlation is significant at the 0.01 level (2 –tailed).

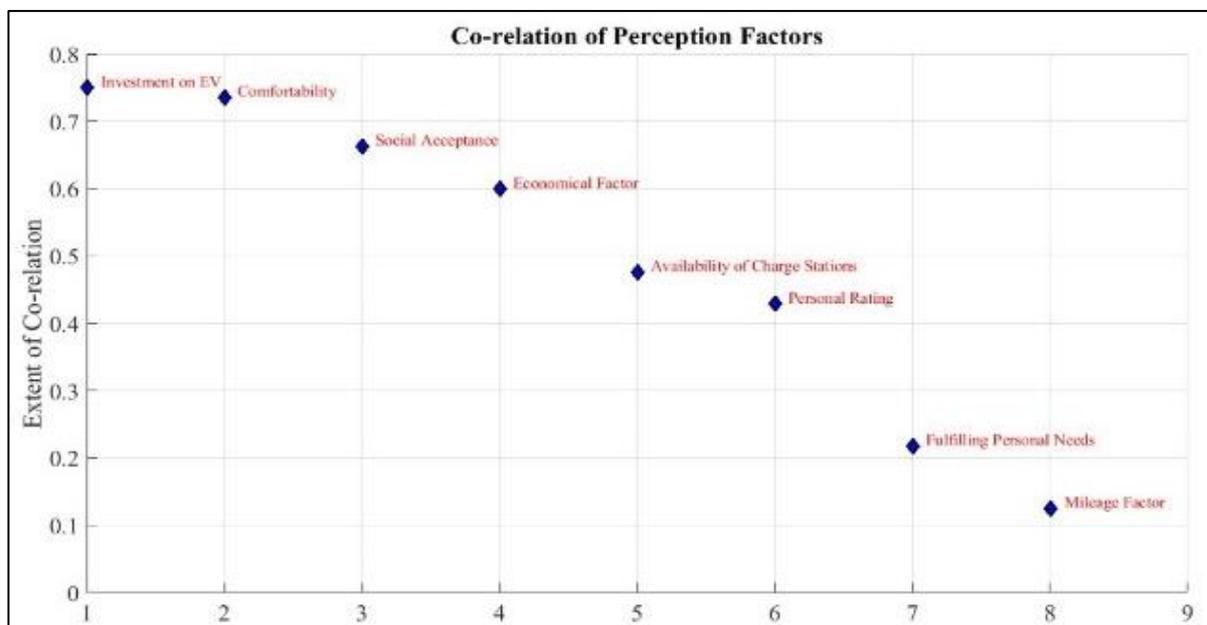


Fig 4: showing how the client perception factors are correlated to the sales of EV

A Pearson product-moment correlation coefficient is evaluated to check out the relationship between Investment on EV, Comfortability, Social Acceptance, Economic factor, Availability of charge station, Personal rating, Fulfilling personal needs, Mileage factor with Sales of EV. It has been observed that there is a positive moderate significant correlation between most of the variables. The most vital relationship is between

Investment on EV (.750), and the weakest significant relationship is between Personal rating and Sales of EV (.429).

The null hypothesis is rejected, and the alternate hypothesis is supported: There is a significant relationship between Client perception of Electric Vehicles and its impact on sales.

Findings of the study

- The research has established that Investment on EV and Comfortability (with EV) provide to the sales of EV the most while Fulfilling personal needs and Mileage factor contribute the least.
- The correlation table between Client perception factors of EV and Sales of EV showed that there was a positive correlation between the client perception of EV and its impact on the sales of EV. It was also seen that the correlation between Client perception factors indicated that there was a significant positive correlation between client perception factors like Investment on EV, Comfortability (with EV) and Social acceptance and Sales of EV. However, there was found to be a weak correlation between Client perception factors like Personal rating, fulfilling personal needs and Mileage factor and Sales of EV.

Conclusion

Client perception is an essential factor that builds up or breaks down any brand. Nowadays, client perception is changing rapidly, and this has to be taken care of as it affects any brand significantly. The study has established that the client perception of EV plays a crucial role in the sales of EV. The study has also established that client perception of EV and sales of EV are directly proportional to each other. Hence it becomes vital for the automobiles to keep their eye on the client perception as it plays a crucial role in increasing their sales and also helps in maintaining competitive advantage. It is also recommended that the Government should try to penetrate the positive perception of EV among potential customers and also promote electric vehicles as they are the future.

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