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## Analysing the consumer perceptions towards electric vehicles with reference to Coimbatore district

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### Abstract

Customer perception is a concept that more and more companies are putting at the heart of their strategy, but for this to be successful they're needs to be clarity about, what customer satisfaction means and what needs to happen to drive improvement. The main objective is to know about the attitude of customers towards sales and service of the company and to analyze the need of the customers based on primary data. For this purpose a sample of 150 has been collected and percentage analysis, and chi-square analysis were used as tool and the conclusion is that the quality of work with showrooms can be increased in future so that the level of satisfaction of customers can be increased.

**Keywords:** customer perception, electronic vehicles and satisfaction

### Introduction

Consumer is a king in the kingdom of market. To understand his behaviour is very necessary for the marketing man. Consumer is the focus of all the marketing activities. Knowledge of his activities and behaviour is one of the most important aspects of the marketing. The consumers buy the goods to satisfy a number of needs and drives. Human wants are unlimited and varying time to time; from place to place and man to man. The study of consumer behaviour holds great interest for us as consumers, as students and scientists, and as marketers. Consumer Behaviour is a rapidly growing discipline of study. There are various reasons why the study of consumer behaviour developed as a separate marketing discipline are shorter product life cycles, increased interest in consumer protection, growth in marketing services, growth of international marketing, development of computer and information technology and increasing competition, etc.

Consumer research process involves six major steps (1) defining research objectives (2) collecting and evaluating secondary data (3) primary research design (4) collecting primary data (5) analyzing data and (6) report preparation. Consumer behaviour doesn't remain the same or constant in every situation it changes time to time. There are various factors which affects consumer behaviour. As the change comes in these factors, consumer behaviour also changes. Following are the factors which affect consumer behavior: (1) age (2) sex (3) marital status (4) income (5) family background (6) education (7) occupation (8) family size (9) geographic factors (10) psychological factors. In this grim battle for snatching maximum share of market, only those producers are destined to emerge victorious who will be able to read the pulse of the buyers. And this is here, where buyer behaviour has a very important role to play.

### Statement of The Problem

Customer preference is a study of physiological, social, physical behaviors of all potential customers as they become aware of evaluation, purchase and consumption and tell others about the products and services. The study is to analyze the customer preference towards EV vehicles which may be useful for reference in the future.

### Objectives of The Study

- To know about the attitude of customers towards sales and service of the company.
- To analyze about the customer expectations and service rendered by the company
- To know about the level of brand awareness of the company.
- To identify the factors that influence consumer Satisfaction towards products of EV vehicles

- To analyze the need of the customers based on primary data.
- To suggest about the level of satisfaction of customers to the company.

### Scope of the Study

The main scope of the study is to analyse the customer satisfaction about EV vehicles and that will help the organisation to rectify the errors to develop the quality of service in future period of time.

### Research Methodology

#### Research design

“A research design is an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure”.

In this study, descriptive research design is used for testing. Descriptive research includes surveys and fact-finding enquires of different kinds.

#### Research instrument

The research instrument used in the study is a ‘structured questionnaire’. These are questionnaires in which there are definite, concrete, and predetermined questions relating to the aspect, for which the researcher collects data. They are presented with exactly the same wordings and in the same order to all the respondents.

#### Method of Data Collection

The two types of data used for the purpose of the study are

- Primary data
- Secondary data

**Primary data:** Primary data consists of a collection of original primary data collected by the researcher. The primary data for the research study were collected through structured questionnaire from different consumers. The questions were structured and direct as to make the respondents understand it easily. The questionnaire has been prepared in such a way that it has taken into consideration all possible ways to get maximum information. In our study the primary data was collected through survey method.

**Secondary data:** Secondary data are those data that have been collected by someone else and which have already been passed through the statistical process. Secondary data here has been collected from books, newspapers, magazines, journals and websites.

**Sampling design:** It refers to the technique or the procedure the researcher would adopt in selecting items for the sample i.e., the size of the sample. Same design is determined before data are collected. There are many sample designs from which a researcher can choose.

#### Sampling procedure

**Sample size:** The sample size is 150 customers who buy EV vehicles.

**Area of sampling:** The area selected for collection of data is Coimbatore district.

**Tools used for analysis:** Percentage analysis, Chi-square

test, Descriptive statistics and Standard deviation

### Analysis and Interpretation

| Demographic variables     | Particulars               | Frequency | Percent |
|---------------------------|---------------------------|-----------|---------|
| Gender                    | Male                      | 106       | 70.7    |
|                           | Female                    | 44        | 29.3    |
|                           | Total                     | 150       | 100     |
| Age                       | Below 18                  | 5         | 3.3     |
|                           | 18-25                     | 54        | 36      |
|                           | 26-35                     | 48        | 32      |
|                           | Above 35                  | 43        | 28.7    |
|                           | Total                     | 150       | 100     |
| Educational qualification | Below 10th or illiterate  | 5         | 3.3     |
|                           | 10th                      | 3         | 2       |
|                           | Higher secondary          | 74        | 49.3    |
|                           | UG                        | 52        | 34.7    |
|                           | PG                        | 16        | 10.7    |
| Place of living           | Total                     | 150       | 100     |
|                           | Semi rural                | 12        | 8       |
|                           | Rural                     | 54        | 36      |
|                           | Urban                     | 74        | 49.3    |
|                           | Semi urban                | 10        | 6.7     |
| Occupational income       | Total                     | 150       | 100     |
|                           | Rs.500001-1000000/month   | 22        | 14.7    |
|                           | Rs.1000001-2000000/ month | 73        | 48.7    |
|                           | Above Rs.2000000/month    | 55        | 36.7    |
| Occupation                | Total                     | 150       | 100     |
|                           | Employee                  | 11        | 7.3     |
|                           | Business or professional  | 122       | 81.3    |
|                           | NRI                       | 9         | 6       |
|                           | Others                    | 8         | 5.3     |

The above table shows about the demographic variables of the respondents were out of 150 respondents 70.7% are male and 29.3% are female. 3.3% are from the age group of below 18, 36% are from the age group of 18-25, 32% are from the age group of 26-35, and 28.7% are from the age group of above 35. 3.3% have studied less than 10<sup>th</sup>, 2% have finished their 10<sup>th</sup> standard, 49.3% have completed their higher secondary, 34.7% have completed their under graduation and 10.7% have completed their post graduation. 8% are from semi rural area, 36% are from rural area, 49.3% are from urban area, 6.7% are from semi urban area. 14.7% are earning between Rs.500001-1000000/month, 48.7% are earning between Rs.1000001-2000000/ month and 36.7% are earning above Rs.2000000/month. 7.3% are employees with companies, 81.3% are business professionals, 6% are NRI's and 5.3% are doing other types of occupation.

**Table 1:** Model of EV vehicles owned by the respondents

|                    | Frequency | Percent |
|--------------------|-----------|---------|
| Sedan              | 47        | 31.3    |
| Mid-size vehicles  | 42        | 28.0    |
| Crossover vehicles | 36        | 24.0    |
| Hatch back         | 25        | 16.7    |
| Total              | 150       | 100.0   |

The above table shows about model of EV vehicles owned by the respondents were out of 150 respondents 31.3% are having sedan type of vehicles, 28% are having mid size EV

vehicles, 24% are having crossover vehicles and 16.7% Hatch back vehicles.

**Table 2:** Best feature with EV vehicles

|         | Frequency | Percent |
|---------|-----------|---------|
| Price   | 34        | 22.7    |
| Style   | 54        | 36.0    |
| Quality | 36        | 24.0    |
| Brand   | 26        | 17.3    |
| Total   | 150       | 100.0   |

The above table shows about best feature with EV vehicles were out of 150 respondents 22.7% said as price, 36% said as style, 24% said as quality and 17.3% said as brand.

**Table 3:** Affordability of price

|       | Frequency | Percent |
|-------|-----------|---------|
| Yes   | 93        | 62.0    |
| No    | 57        | 38.0    |
| Total | 150       | 100.0   |

The above table shows about affordability of price with the respondents were out of 150 respondents 62% said that the price is affordable and 38% said that the price is not affordable.

**Table 4:** Price range affordable by the respondents

|                        | Frequency | Valid Percent |
|------------------------|-----------|---------------|
| Less than Rs.35,00,000 | 19        | 20.4          |
| 35, 00,000-55, 00,000  | 17        | 18.3          |
| 55, 00,000-1corer      | 25        | 26.9          |
| 1Corer and above       | 32        | 34.4          |
| Total                  | 93        | 100.0         |

The above table shows about price range affordable by the respondents. Out of 93 respondents who are affordable with the price of the car 20.4% can afford price range less than Rs.35,00,000, 18.3% can afford between the price range 35, 00,000-55, 00,000, 26.9% can afford price range between 55, 00,000-1corer and 34.4% can afford even if the vehicles price is more than 1 corer.

**Table 5:** Car value for money

|       | Frequency | Percent |
|-------|-----------|---------|
| Yes   | 85        | 56.7    |
| No    | 65        | 43.3    |
| Total | 150       | 100.0   |

The above table shows about car value for money. Out of 150 respondents 56.7% said that the car is worth value for money and 43.3% said that the car is not worth for the money the car is been bought.

**Table 6:** Reason for saying value for money by the respondents

|          | Frequency | Valid Percent |
|----------|-----------|---------------|
| Brand    | 12        | 14.1          |
| Luxuries | 13        | 15.3          |
| Quality  | 38        | 44.7          |
| Others   | 22        | 25.9          |
| Total    | 85        | 100.0         |

The above table shows about reason for saying value for money by the respondents. Out of 85 respondents who said as worth for money 14.1% are saying about the worthiness based on the brand bought, 15.3% are saying based on luxuries with the car, 44.7% are saying based on the quality and 25.9% are saying based on other factors. It depicts that maximum of the respondents are saying about the worthiness based on quality of the car.

**Table 7:** Satisfaction towards after sales service

|       | Frequency | Percent |
|-------|-----------|---------|
| Yes   | 124       | 82.7    |
| No    | 26        | 17.3    |
| Total | 150       | 100.0   |

The above table shows about satisfaction towards after sales service with the respondents. Out of 150 respondents 82.7% are satisfied and 17.3% are not satisfied towards the quality of service. It depicts that most of the respondents are satisfied towards the quality of service.

**Table 8:** Reason for satisfaction towards after sales service

|                                    | Frequency | Valid Percent |
|------------------------------------|-----------|---------------|
| Good knowledge to sales personnel  | 36        | 29.0          |
| Good customer relationship         | 26        | 21.0          |
| Quality requirement's for services | 28        | 22.6          |
| Others                             | 34        | 27.4          |
| Total                              | 124       | 100.0         |

The above table shows about reason for satisfaction towards after sales service with the respondents. Out of 124 respondents who are satisfied with the service 29% are satisfied towards good knowledge to sales personnel, 21% are satisfied with good customer relationship, 22.6% are satisfied with quality requirement's for services and 27.4% are satisfied with other factors.

**Table 9:** Attractive specification with the EV car

|       | Frequency | Percent |
|-------|-----------|---------|
| Yes   | 124       | 82.7    |
| No    | 26        | 17.3    |
| Total | 150       | 100.0   |

The above table shows about attractive specification with the EV car. Out of 150 respondents 82.7% are said that there is an attractive specification with the EV bought and 17.3% said no for that.

**Table 10:** Reason for attractive specification with the EV vehicles

|                         | Frequency | Valid Percent |
|-------------------------|-----------|---------------|
| Luxuries specifications | 36        | 29.0          |
| Brand                   | 26        | 21.0          |
| Comfortability          | 28        | 22.6          |
| Others                  | 34        | 27.4          |
| Total                   | 124       | 100.0         |

The above table shows about reason for attractive specification with the EV vehicles. Out of 150 respondents 29% said as luxuries specifications, 21% said as brand, 22.6% said as Comfortability and 27.4% said as other factors.

**Table 11:** Satisfaction towards efficiency

|                     | Frequency | Percent |
|---------------------|-----------|---------|
| Highly satisfied    | 7         | 4.7     |
| Satisfied           | 50        | 33.3    |
| Neutral             | 55        | 36.7    |
| Dissatisfied        | 17        | 11.3    |
| Highly dissatisfied | 21        | 14.0    |
| Total               | 150       | 100.0   |

The above shows that out of 150 respondents 4.7% are highly satisfied, 33.3% are satisfied, 36.7% are neutral, 11.3% are dissatisfied and 14% are highly dissatisfied towards performance efficiency of EV vehicles.

**Table 12:** Satisfaction towards durability

|                     | Frequency | Percent |
|---------------------|-----------|---------|
| Highly satisfied    | 18        | 12.0    |
| Satisfied           | 59        | 39.3    |
| Neutral             | 39        | 26.0    |
| Dissatisfied        | 23        | 15.3    |
| Highly dissatisfied | 11        | 7.3     |
| Total               | 150       | 100.0   |

**Table 14:** Gender \* Type of EV vehicles owned by the respondents

|        |        | Sedan | Mid-size vehicles | Crossover vehicles | Hatch back | Total |
|--------|--------|-------|-------------------|--------------------|------------|-------|
| Gender | Male   | 7     | 39                | 32                 | 13         | 91    |
|        | Female | 8     | 16                | 0                  | 15         | 39    |
| Total  |        | 15    | 55                | 32                 | 28         | 150   |

| Observed Frequency | Expected Frequency | (O-E)  | (O-E) <sup>2</sup> | (O-E) <sup>2</sup> /E |
|--------------------|--------------------|--------|--------------------|-----------------------|
| 7                  | 12.41              | -5.41  | 29.26              | 2.36                  |
| 39                 | 45.50              | -6.50  | 42.25              | 0.93                  |
| 32                 | 26.47              | 5.53   | 30.55              | 1.15                  |
| 13                 | 17.37              | -7.37  | 54.36              | 3.13                  |
| 8                  | 5.32               | 2.68   | 7.19               | 1.35                  |
| 16                 | 19.50              | -3.50  | 12.25              | 0.63                  |
| 0                  | 11.35              | -11.35 | 128.72             | 11.35                 |
| 15                 | 7.45               | 3.55   | 12.63              | 1.70                  |
|                    |                    |        |                    | 24.87                 |

**Formala For CHI-Square**

$$\text{Chi-square} = \sum (O-E) \wedge 2/E$$

Degrees of freedom= (number of rows -1) \*(number of columns - 1)

$$= (r-1) *(c-1)$$

$$= (5-1) *(2-1)$$

$$= (4)*(1)$$

$$= 4$$

Table value = 9.488 for degrees of freedom and 5% level of significance

Calculator value = 24.87

As calculated value > table value the null hypothesis is rejected.

Therefore, it is that there is a significant relationship between gender and type of EV vehicles owned by the respondents

**Findings**

- Most of the respondents are male in our survey.
- Most of the respondents are from the age group of 18-25 in our survey.
- Maximum of the respondents are earning from 10000-20000/month in our survey.

The above shows that out of 150 respondents 12% are highly satisfied, 39.3% are satisfied, 26% are neutral, 15.3% are dissatisfied and 7.3% are highly dissatisfied towards durability of using EV vehicles.

**Table 13:** Satisfaction towards style

|                     | Frequency | Percent |
|---------------------|-----------|---------|
| Highly satisfied    | 18        | 12.0    |
| Satisfied           | 61        | 40.7    |
| Neutral             | 35        | 23.3    |
| Dissatisfied        | 25        | 16.7    |
| Highly dissatisfied | 11        | 7.3     |
| Total               | 150       | 100.0   |

The above shows that out of 150 respondents 12% are highly satisfied, 40.7% are satisfied, 23.3% are neutral, 16.7% are dissatisfied and 7.3% are highly dissatisfied towards style of EV vehicles.

**Gender \* Type of EV vehicles owned by the respondents**

H0: There is no significant relationship between gender and Type of EV vehicles owned by the respondents

H1: There is a significant relationship between gender and Type of EV vehicles owned by the respondents

- Maximum of the respondents are having compact type of EV vehicles.
- Maximum of the respondents said that style is the best feature with EV vehicles
- Maximum of the respondents are owning Audi car.
- Most of the respondents said that the price of the car is affordable.
- Most of the respondents said that the price range is even if the vehicles price is more than 1.40 corers.
- Maximum of the respondents said that the car is worth value for money.
- Maximum of the respondents are saying about the worthiness based on quality of the car.
- Most of the respondents are satisfied towards the quality of service.
- Most of the respondents are satisfied with quality requirement's for services.
- Most of the respondents said that there is an attractive specification with the EV bought.
- Most of the respondents said as brand as a reason for attractive specification with the EV vehicles.
- Majority of the respondents are satisfied towards fuel consumption of EV vehicles.

- Maximum of the respondents are neutral towards performance efficiency of EV vehicles.
- Most of the respondents are satisfied towards durability of using EV vehicles.
- Maximum of the respondents are satisfied towards style of EV vehicles.
- Most of the respondents are neutral towards loan specialties provided for EV vehicles.
- Maximum of the respondents are satisfied towards service provided for EV vehicles.
- There is a significant relationship between gender and type of EV vehicles owned by the respondents.

### **Suggestions**

- The small segment vehicles can be manufactured in a large scale as the employees showing more willingness towards the segment vehicles and if they do so then the sales volume can be increased in future period of time.
- The employees feel that style is the best feature of the company and if the company launches stylist vehicles in future then the sales can be increased.
- The quality of work with showrooms can be increased in future so that the level of satisfaction of customers can be increased.

### **Conclusion**

The conclusion is that the quality of work with showrooms can be increased in future so that the level of satisfaction of customers can be increased.

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