"Analyzing The Consumer Perceptions Towards Electric Vehicles with Reference to Nashik District Maharashtra State India"

Mr. Ramayan Bhimal Yadav[1*], Dr. Harish Dilip Kalan[2]

[1*]Research Scholar, School of Commerce & Management Studies, Sandip University, Nashik
Email id - rbyadav12@rediffmail.com
[2]Associate Professor, School of Commerce & Management Studies, Sandip University, Nashik
Email id – harishkalan@gmail.com

*Corresponding Author: - Mr. Ramayan Bhimal Yadav
*Research Scholar, School of Commerce & Management Studies, Sandip University, Nashik
Email id - rbyadav12@rediffmail.com

Abstract:
The customer concept is an idea that a rising number of organizations are putting at the core of their strategy; yet, for this to be effective, they must be clear about what consumer pride means and what has to happen to generate growth. The key purpose is to understand the mindset of clients who are closer to the organization's income and carrier, as well as to investigate the needs of the consumers using only primary data. For this reason, a sample of a hundred and fifty was collected, and percent evaluation and chi-square evaluation were employed as devices. The view is that the satisfaction of work with showrooms may be increased in the future so that the amount of pride of clients.

Keywords: mindset of clients, chi-square, pride of clients

1.0 Introduction:

The consumer is king in the country of the marketplace. Understanding his behavior may be very vital for the advertising guy. The consumer is the point of interest in all marketing sports. Knowledge of his activities and behavior is one of the most vital components of advertising and marketing. The purchasers purchase the goods to satisfy some of their needs and drives. Human desires are limitless and vary from time to time, from vicinity to place, and from guy to guy. The study of consumer behavior holds superb interest for us as consumers, as college students and scientists, and as entrepreneurs. Consumer behavior is a swiftly growing discipline of study. There are diverse reasons why customer behavior has evolved as a separate advertising discipline: shorter product existence cycles, improved patron safety, growth in advertising services, the boom of global advertising and marketing, the development of laptops and data generation, growing competition, etc.

Consumer research entails the six most important steps. (1) Defining study targets (2) accumulating and comparing secondary facts; (3) number one study design; (4) amassing primary information; (5) reading records; and (6) report training. Consumer behavior doesn't continue to be identical or regular in each state of affairs; it modifies from time to time. There are different factors that affect customer behavior. As the alternate encounters these factors, client behavior also changes. Following are the factors that influence client conduct: (1) age (2) intercourse (three) marital fame (4) earnings (5) own family background (6) training (7) career (eight) own family size (nine) geographic elements (10) mental elements. In this grim struggle to snatch the maximum proportion of the market, manufacturers are destined to emerge victorious and might be capable of examining the heartbeat of their customers. And that is here, wherein client behavior has a completely crucial role to play.

2.0 Statement of the problem

Customer choice is a look at of physiological, social, physical behaviors of all abilities of customers as they grow to be aware about evaluation, purchase, and intake and to tell others about the goods and services. The examine is to investigate the consumer choice closer to EV automobiles, which may be beneficial for reference within the future.

3.0 Objectives of the study

To understand client attitudes regarding the company's sales and services.
To analyze client expectations and services provided by the organization.
To assess the company's brand awareness.
To identify variables influencing consumer satisfaction with EV automobiles.

4.0 Scope of the Study

The study's main goal is to analyze customer satisfaction with EV vehicles, which will enable the organization to correct faults and improve the standard of service in the future.

Research Methodology Research layout

"A research design is an association of situations for collection and evaluation of statistics in a manner that objectives to mix relevance to the research cause with economy in system".

In this , descriptive research layout is used for trying out. Descriptive studies consist of surveys and fact-locating enquiries of different types.

5.0 Research tool

The research tool used inside the look at is a established questionnaire'. These are questionnaires in which there are concrete, and predetermined questions regarding the thing, for which the researcher collects information. They are offered with precisely the equal wordings and in the identical order to all the respondents.

6.0 Method of Data Collection

The types of data used for the purpose of the examination are.

Primary information: Primary records include a set of unique number one facts accrued via the researcher. The primary records for the studies examine have been accumulated through structured questionnaire from Nashik distinct clients. The questions had been established and direct as to make the respondents understand it easily. The questionnaire has been prepared in this type of manner that it has taken into consideration all viable approaches to get most records. In our look at the number one information changed into accrued via survey approach.

Secondary records: Secondary records are the ones records that have been accrued by using someone else and which have already been passed through the statistical procedure. Secondary facts here have been accrued from books, newspapers, magazines, journals, and web sites.

7.0 Sampling design:

It refers to the approach or the procedure the researcher might adopt in deciding on items for the pattern i.e., the size of the sample. The same layout is decided before information is accumulated. There are many pattern designs from which a researcher can pick.

Sampling way

Sample size: The sample size is 150 clients who purchase EV cars.

Area of sampling: The area decided on for collection of statistics is Nashik district.

Tools used for evaluation: Percentage evaluation, Chi-square.

Descriptive information and Standard deviation.

8.0 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
	Total	150	100
Place of living	Semi-rural	12	8
	Rural	54	36
	Urban	74	49.3
	Semi urban	10	6.7
	Total	150	100

Occupational income	Rs.500001-1000000/month	22	14.7
	Rs.1000001-2000000/ month	73	48.7
	Above Rs.2000000/month	55	36.7
	Total	150	100
Occupation	Employee	11	7.3
	Business or professional	122	81.3
	NRI	9	6
	Others	8	5.3
	Total	150	100

The following table displays the demographic factors of the respondents, which are 70.7% male and 29.3% female out of 150. 3.3% are younger than 18, 36% are between the ages of 18 and 25, 32% are between the ages of 26 and 35, and 28.7% are beyond the age of 35. 3.3% studied less than 10th grade, 2% completed their 10th grade, 49.3% completed their higher secondary, 34.7% completed their undergrad, and 10.7% completed their postgraduate. 8% come from semi-rural areas, 36% from rural areas, 49.3% from cities, and 6.7% from semi-urban areas.

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
Qality	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 the reason for saying value for money by the respondents. Out of 85 respondents who said it is 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 satisfaction with after sales service with the respondents. Out of 150 respondents 82.7% are satisfied and 17.3% are not satisfied with the quality of service. It shows 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 requirements for services	28	22.6
Others	34	27.4
Total	124	100.0

The above table shows the 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 requirements 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 attractive specifications with the EV car. Out of 150 respondents 82.7% 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 with the 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

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 with the 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.

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)^2	(O-E)^2/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

Formula For Chi-Square

Chi-square = $\sum (O-E)^2/E$

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.

9.0 Findings

- The majority of a people surveyed were also boys throughout humanity overview.
- The majority of participants seem to be from its maturity level trying to gather yeah 18-25 through in out evaluation.
- The confine of a total respondent seems to be obtaining and by 10000-20000/month throughout with us evaluation.
- Limit of both the participants were also having a small the kind vit cars.
- Most of participants even said fashion seems to be the finest component to vit cars.
- A confine of people surveyed has been posses suv vehicular.
- The majority of both the people surveyed even said the price of car is cheap.
- The majority of participants also said the price spectrum would be irrespective of if the vehicular expense is far more than. approximately 50 position of objects.
- A restrict of a participant also said the automotive has been value motivation such as finances.
- A confine of total respondent would be trying to say regarding the benefits through illumination yeah environment of a automotive.
- The larger part of both the people surveyed were also proud of the character after all management.
- The larger part of total respondent were also pleased with performance preconditions such as administration's policies.
- The considerable lot of both the people express there is an attractive information with the epsilon procured.
- The overwhelming majority of both the participants said that as label as a rationalization next to enticing unique as for vit vehicular.
- Most of the participants seem to be fully met toward the fuel economy like exacerbation of chronic cars.
- The survey's respondents are predominantly male. The majority of responders in our poll are between the ages of 18 and 25.
- Respondents in our poll earn an average of 10000-20,000 per month.
- The majority of responders own small electric automobiles. the majority of respondents rated style as the top characteristic of EV vehicles.
- The majority of responders own Audi cars.
- Most responders believe the automobile is inexpensive.
- Respondents generally agreed that the pricing range applies even for automobiles priced over 1.40 corners.
- The majority of respondents believed the automobile is a good value for money.
- The maximum number of respondents.

10.0 Suggestions:

- Small segment cars can be manufactured in a large scale as representatives show greater preparedness to do so, thereby increasing company volume in the future.
- Representatives believe that style is the finest aspect of the business and suggest that dispatching attractive automobiles in the future might increase sales.
- The nature of work with display spaces can be increased in the future, hence increasing client satisfaction.

11.0 Conclusion:

The ultimate goal is to increase the nature of work with display spaces in the future, hence increasing client satisfaction.

1. Awareness: assessing the level of awareness among consumers about electric vehicles in the region. This can be done through surveys and interviews to understand if consumers have knowledge about the existence and benefits of electric vehicles.

2. Perception of benefits: examining how consumers perceive the benefits of electric vehicles, such as reduced emissions, lower operating costs, and environmental sustainability. Understanding if consumers prioritize these factors and are willing to switch to electric vehicles based on these benefits.

3. Charging infrastructure: evaluating the availability and convenience of charging infrastructure in Nashik district. Consumers are more likely to consider electric vehicles if there is a well-developed charging network in their vicinity.

4. Range anxiety: determining if consumers are concerned about the limited driving range of electric vehicles and how that affects their decision-making process. Addressing range anxiety through awareness campaigns and highlighting battery improvements in newer models can help increase consumer confidence.

5. Cost considerations: Assessing the price point of electric vehicles and whether consumers perceive them as affordable or cost-prohibitive. Identifying if consumers are aware of any government incentives or subsidies that might make electric vehicles more accessible.

6. Performance: analyzing consumer perceptions of the performance and functionality of electric vehicles compared to traditional internal combustion engine vehicles. Assessing if consumers have any concerns about electric vehicle reliability, power, or acceleration.

7. Brand awareness: investigating if consumers are familiar with different electric vehicle brands available in the market. Determining if consumers have preferences for specific brands based on factors like reputation, customer service, or reliability.

8. Word of mouth and influence: Understanding the impact of word of mouth and social influence on consumer perceptions. Analyzing if positive experiences or recommendations from friends, family, or colleagues play a significant role in shaping consumer attitudes towards electric vehicles.

By analyzing these factors, marketers and policymakers can gain insights into consumer perceptions towards electric vehicles in Nashik district. This information can help shape marketing strategies and policies to promote electric vehicle adoption in the region.

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