PREPAREDNESS REPERCUSSIONS OF AFTER SALES IN ELECTRICALTWO WHEELER INDUSTRY IN LUCKNOW MARKETS

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ABSTRACT
This Paper refers the connection of customer satisfaction , Loyalty due to customer satisfaction which affects the buying decision in the customer mind .
This paper also refers the impact of customer parameters on the customer satisfaction . Features which are there but does not impact and the features which are missing which can lead a great satisfaction in customer mind in Lucknow market for the Electrical Vehicle Customers .

The customer survey in Lucknow and EV is very negligible for electrical vehicles and this may help the manufacturers to understand the area of focus which can lead for a enhanced market , align with plan of Indian Government for 30% market share to save the environment and to promote the manufacturing in India under the FAME 2 scheme.
The research , considering above has done on Title Subject " PREPAREDNESS REPERCUSSIONS OF AFTER SALES IN ELECTRICALTWO WHEELER INDUSTRY IN LUCKNOW MARKETs" to help the readers , entrepreneurs to have a scientific view in differentiated age and gender to understand the need of after sales which may increase the satisfaction among them .

I. INTRODUCTION

The introduction of electric vehicles (EV) can not only bring fundamental changes in sustainable traffic behavior, but is also an important way to protect the environment and sustainability (Smith, 2008), promoting the widespread use of electric vehicles has become a special concern. . vehicles effectively. in countries around the world. For example, according to China's New Energy Vehicle Industry Development Plan (2021-2035), sales of new energy vehicles will account for approximately 20% of total sales in 2025 (State Council Office 2020, No. 39). document).However, some researchers have expressed the belief that anticipated emotions can directly influence intention and behaviorindependently of other core elements Additional research has shown that different types of anticipated emotions, such as positive anticipated emotions (PAE) and negative anticipated emotions (NAE), can have different effects on behavioralintentions due to the importance of different situations and behavioral goals.

Despite this, Chinese car companies face a dual challenge: a reduction in subsidies for electric cars and the ongoing novel coronavirus (COVID-19) pandemic. Due to the intensification of competition in the industry, methods to further increase the purchase demand of electric vehicles have become very important and urgent. Therefore, relevant governments must understand the incentives and barriers that determine consumer adoption of EVs in order to provide an objective basis for appropriate policy making. What are the main factors influencing the intention to buy electric cars? It has been suggested that consumers' emotional factors may be more critical than their rational factors for the successful adoption of new products (Moons and De Pelsmacker, 2012). However, consumers' anticipatory feelings are a relatively neglected aspect in the study of electric vehicle adoption intentions.

Therefore, relevant governments must understand the emotional factors that influence consumers' intentions to purchase electric cars, as well as the various psychological factors that influence their purchase decisions.

Feasibility and How it Works :
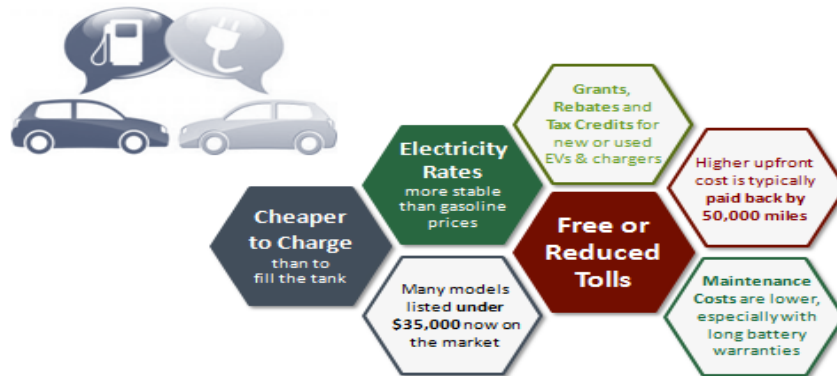
Engine and Gear Box is replaced with a battery , Controller and a Motors which may be front, Rear or centre mounted motor.
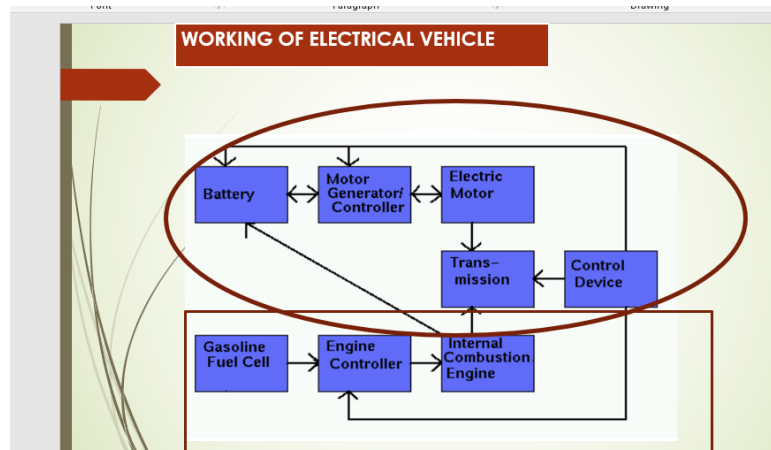
Meaning of after service sale- Service:

After-sales service is any support provided to a customer after the product or service has   been purchased.   ...
 Examples of after-sales service include "warranty service, training, or repair for a product, Installation, Online Support, skill transfer to local level , spare parts support, customer education and fixing change in case – product failures", Warranty and Warranty Services, On line Technical Support , Off Road Services etc.

PROBLEM STATEMENT OF RESEARCH ::
- To achieve the stated goal as well as the research problem, the researcher designed the following research questions :
- ➢ Do the after-sales services offered by E.V manufacturers, affect customer satisfaction and loyalty?
- ➢ What are the after-sales services provided for the selected electric two-wheeler?
- ➢ Does each after-sales service provided by different companies have a different effect on customer satisfaction?
- ➢ Does customer satisfaction have any relationship with customer loyalty towards the after-sales service of electric two-wheelers? What challenges did the selected automakers face in implementing after-sales service**?**

H0: There is no link between Customer Satisfaction and Loyalty.
 HA: There is link in the Customer Satisfaction and Loyalty.
H0-1: There is no different effects of same Customer Satisfaction parameters on different Service Providers.
HA-1: There is different effects of same Customer Satisfaction parameters on different Service Providers.

Objective ::
The primary objective of this two-phase mixed-method sequential scope study was to assess whether the after-sales services provided to customers after the sales , affected customer satisfaction. and overall customer loyalty because , Such customers help in incremental sales and in brand building.

The specific objectives of this study are:
1. Identify the components of after-sales service to be provided on the selected electric two-wheeler which are important in Loyalty .
2. Comparison of the influence of   after-sales services factors on Customer Satisfaction of the selected electric two-wheeler- "Hero and Okinawa" , means " has the After Sales parameters same or different effect with different companies";
3- Identify the challenges of establishing after-sales service on selected electric two-wheelers.
Challenges of After Sale Service :
- ➡ USING TODAYS DATA EFFECTIVELY FOR NEXT LEVEL OF PRODUCT AND SERVICES
- ➡ LACK OF SOP AND STANDARDIZATION IN SERVICE ,INAPPROPRIATE REGULATIONS WHICH VARY STATE TO STATE.
- ➡ CUSTOMER SATISFECTION MEASURING AND DOCUMENTATION, ANALYSIS AND ACTION.
- ➡ QUALITY OF PRODUCT AND SERVICES , ESTABLISHING PRODUCT LIFE CYCLE
- ➡ MEETING PROMISE DELIVERY TIMES (PDT) AND COST (PCD) AND ROBUST WORKSHOP ORIENTATION PROCESS REFERRING PAST TO ACT IN FUTURE WITH SPECIFIC NEED OF CUSTOMERS, CHURNING OF MANPOWER .
- ➡ INAPPROPRIATE CHARGING INFRA , REGULATION ON SWAPABLE BATTERY
- ➡ LACK OF SKILL ON GROUND FOR REPAIRS , COSTLY REPAIRS DUE TO UNAVAILABILITY OF CHILD PARTS.
- ➡ SAFETY MEASURES FOR BATTERY AND RESTRICTION ON MANIPULATION ON ACCOUNT OF BATTERY SAFETY BY MANUFACTURERS.
- ➡ LACK OF SIMPLIFICATION , COMMONIZATION FOR CHARGERS , CONTROLLERS AND THE BATTERY.
- ➡ VERY HIGH DEPENDENCY ON THE IMPORT FOR BATTERY AND RELATED ELECTRONINC COMPONENTS , LEADING SHORTAGES AND CUTOMER DISSATISFACTION ON TIMELY REPAIRS.

Research methodology:
There are three types of research design used quantitative, qualitative and mixed. Mixed methods research is an approach that combines or links both qualitative and quantitative forms. Based on considerations such as time, weights, mixing, and the theory of mixed methods, the authors developed processes such as the sequential, concurrent, and transformative processes described in Creswell's work. (2009, p. 206). " In this study, the researcher used a sequential (qualitative - quantitative) exploration process using the results of quality feedback from the support of after-sales service managers and staff from "Hero and Okinawa" dealerships.

After-sales technicians and staff, Co-Ordinator to collect quantitative data from the customer with questionnaire. During the initial phase of the study, an interview was conducted with dealer staff of EV manufacturer as how the after-sales services provided , and to identify challenges in service implementation. Data collection for questionnaire was done by the Service Managers of EV dealers in Lucknow.

In the second stage, the results of the interview were used further to discover the level of customer satisfaction in each after-sales service of these different companies. An association or mixture has occurred between the analysis of qualitative data and the collection of quantitative data.

DATA TECHNIQUES :

- ● DATA SOURCES
- ● STUDY POPULATION
- ● SAMPLE POPULATION
- ● SAMPLING TECHNIQUES
- ● SAMPLE POPULATION
- ● DATA COLLECTION PROCEDURE
- ● DATA ANALYSIS(VALIDITY RELIABILTY,AFTER SALES)

II. RESULT :

The total respondent were 625 out of which 190 from Okinawa Scooters and 475 from Hero Electric . The further distribution based age , gender and income is as below:

Profile of respondents		Name of the company			
		HERO ELECTRIC		OKINAWA	
		Frequency	Percent	Frequency	Percent
Gender	Female	118	24.8	75	39.4
	Male	357	75.15	115	60.5
	Total	475	100	190	100
Age	Under 25 years	97	20.4	25	13.1
	26-40 years	230	48.4	90	47.3
	41-60 years	100	21.05	65	34.2
	Over 60 years	48	10.1	10	5.2
	Total	475	100	190	100
Educational level	Below secondary school	0	0	0	0
	12 grade complete	19	4.0	39	20.5.
	Diploma	190	40.0	45	23.6
	Bachelor degree	219	46.1	67	35.2
	Master degree and above	47	9.8	39	20.5
	Total	475	100	190	100

Frequency		Name of the company			
		HERO ELECTRIC		OKINAWA	
		Frequency	Percent	Frequency	Percent
1	Less than2 times service	0	0	22	11.5
2	2times	26	5.3	17	8.9
3	2-3 times	54	10.5	36	18.9
4	3-6times	112	22.8	50	26.3
5	More than 7 times	224	47.4	58	30.5
6	8-10 times	49	10.5	4	2.1
7	More than 10 times	9	1.8	2	1.05
8	10-11 times	1	1.8	1	0.5
Total		475	100	190	100

Kano Model :

Customer's requirement		Dysfunctional question				
		I like it	I expect it	I „m neutral	I can tolerate it	I dislike it
Functional question	I like it	Q	A	A	A	O
	I expect it	R	I	I	I	M
	I"m neutral	R	I	I	I	M
	I can tolerate it	R	I	I	I	M
	I dislike it	R	R	R	R	Q

Where customer requirement is: M = Must-Be quality O=One Dimensional quality

A = Attractive quality

R = Reverse quality i.e. wrong features, that would make the user experience worse

Q = Questionable i.e. the potential user answers are inconsistent

I = Indifferent quality i.e. the potential user doesn't really E.Ve about the feature.

Equation 1: Customer satisfaction coefficients

$$\text{Customer's Satisfaction} = \frac{A+O}{A+O+I+M}$$

$$\text{Customer's Dissatisfaction} = \frac{O+M}{(-1)*(A+O+I+M)}$$

$$\text{Total Customer Satisfaction} = \frac{A+O}{A+O+I+M} + \frac{O+M}{(-1)*(A+O+I+M)} = \frac{A-M}{(A+O+I+M)}$$

CUSTOMER REQUIREMENTS WHICH ARE CLOSER TO THE CLASSIFICATION OF ONE - DIMENSIONAL REQUIREMENTS (n = 190)- OKINAWA SCOOTERS

Where Maintenance ,Inspection, Spare Parts , has major impacting Okinawa, Warranty has major role and will create dissatisfaction if absence but will not increase satisfaction. Washing is an attractive quality which will delight Okinawa Customers.
On line support and Documentation has negligible impact With training as reverse impact on customer mind.

	After sale services	Customers requirement and frequency						
		A	O	M	I	R	Q	Total
1	Maintenance	34	86	5	64	1	0	190
2	Spare parts supply	43	97	18	32	0	0	190
3	On line (telephone) service	36	40	22	91	1	0	190
4	bike washing	81	46	10	52	0	1	190
5	Inspection	10	71	64	45	0	0	190
6	Warranty	24	52	74	40	0	0	190
7	Training (driving orientation)	3	14	48	40	64	21	190
8	Documentation	17	22	21	121	6	3	190

Source: Own survey, 2021

	After sale services	Frequency	Satisfaction Dimension	Dissatisfaction dimension	Total customer's Satisfaction
l	Maintenance	O(86)	0.634	- 0.48	0.174
!	Spare parts supply	O(97)	0.736	- 0.6	0.13
5	Online (telephone) service	I(91)	0.40	- 0.32	- 0.08
l	Inspection	O(71)	0.42	- 0.70	- 0.18
5	Documentation	I(121)	0.18	- 0.22	- 0.04
5	warranty	M(74)	0.4	-0.66	-0.26
7	Training	R(64)	0.4	-0.42	-0.33

HERO ELECTRIC CUSTOMER REQUIREMENTS WHICH ARE CLOSER TO THE CLASSIFICATION OF ONE -DIMENSIONAL REQUIREMENTS (n = 475)

Where Maintenance , Spare Parts , has major impact,
On line support and Washing has negligible impact
With training as reverse impact on customer mind. Warranty
Must be although its absence will create dissatisfaction but
its presence will not increase satisfaction. Training has a reverse
Trait .

Table 4.4: THE CLASSIFICATION OF HERO ELECTRIC REQUIREMENTS ACCORDING TO KANO MODEL (n = 475)

	After sale services	Customers requirement and frequency						
		A	O	M	I	R	Q	Total
1	Maintenance	67	208	49	141	8	2	475
2	Spare parts supply	74	283	24	91	2	1	475
3	On line (Telephone) service	125	99	33	208	8	2	475
4	bike washing	66	100	24	283	1	2	475
5	Inspection	25	158	133	149	9	1	475
6	Warranty	67	125	175	108	0	0	475
7	Training (driving orientation)	8	100	91	91	158	27	475
8	Documentation	33	67	33	249	90	3	475

Source:Own survey, 2021

	After sale services	Frequency	Satisfaction Dimension	Dissatisfaction dimension	Total customer's Satisfaction
1	Maintenance	O (208)	0.57	- 0.55	0.02
2	Spare parts supply	O (283)	0.75	- 0.65	0.01
3	On line Service	I (208)	0.48	0.38	0.10
4	Bike Washing	I (283)	0.357	0.25	0. 107
5	Warranty	M(175)	0.39	0.51	-0. 12
6	Training	R (158)	0.40	0.63	-0.23
7	Documentation	I (249)	0.22	0.44	-0.22

CUSTOMERS RESPONSE ON LOYALTY FOR THE EFFECT OF AFTER SALE SERVICE - OKINAWA AND HERO ELECTRIC ON CUSTOMER SATISFACTION (n =625)

		Name of the company			
		HERO ELECTRIC		OKINAWA	
		Frequency	Percent	Frequency	Percent
Do you think after sale service has an effect on customer satisfaction and loyalty	No	85	17.9	19	10
	Yes	390	82.1	171	90
	Total	475	100	190	190

Majority of customer validate that customer satisfaction and Its Parameter has a great impact On Loyalty .

Regression equation for after sale service satisfaction

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_k X_k + e_i$$

Where,

β_o = Point of intercept
Y = Overall satisfaction of customers in the after sale services
X_k = After sale service components
βk = Slope of the line
e_i = Error term associated with the ith observation

Tool that determine the strength and character of relationship with one Dependent Variable(Y-Loyalty) with respect to a series of independent variables (After Sales Satisfaction)

Regression equation for after sale service satisfaction

Table 4.14: REGRESSION ANALYSIS (n= 625)

Model Summary				
Model	R	R Square	Adjusted R Square	Error of the Estimate
5	.864^e	.746	.738	.449

e. Predictors: (Constant), Telephone service, Maintenance service, Spare part supply service, Warranty service

Source: Own survey, 2019

As shown in the table above, the **R value = 0.86 shows a close relationship between the aftersales service components and the overall customer satisfaction in the after-sales service.** The value of R^2 = 0.746 explains that 74 .6% of the change in satisfaction is explained, while 25. % is still not explained by the after-sales service component.
Thus, the predictive power of the model is high.

chi -square test on spare part service (n= 625)

Spare part supply parameters	Company	Percent (Hero electric Okinawa = 475, n = 190)					Mean	Chi-square	df	Sig.
		Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied				
Customer satisfaction on access of spare parts in store	HERO ELECTRIC	0	57.7	25	26.8	39	4	9.8	3	0.02*
	OKINAWA	0	42.3	75	73.2	61	4			
Customer satisfaction on on time supply of spare parts	HERO ELECTRIC	30.8	88.2	23.9	25	34	3	25.9	4	0.00*
	OKINAWA	69.2	11.8	76.1	75	66	4			
Customer satisfaction on price of spare parts	HERO ELECTRIC	100	58.3	18.2	28.6	34	4	10.5	4	0.03*
	OKINAWA	0	41.7	81.8	71.4	66	4			
Customer satisfaction in the overall Spare part supply .	HERO ELECTRIC	0	25	65	22	40	4	8.1	3	0.04*
	OKINAWA	0	75	35	78	60	4			

CHI-SQUARE TEST ON WARRANTY PARAMETERS (n = 625)

Warranty parameters	Company	Percent (Hero electric okinawa = 475, n = 190)					Mean	Chi-square	df	Sig.
		Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied				
Customer satisfaction on clearness of warranty information	HERO ELECTRIC	0	90.9	42.9	27.7	33.3	4	17.8	3	0.000*
	OKINAWA	0	9.1	57.1	72.3	66.7	4			
Customer satisfaction on length of warranty	HERO ELECTRIC	100	90	34.5	27.1	35.5	4	17.9	4	0.001*
	OKINAWA	0	10	65.5	72.9	64.5	4			
Customer satisfaction on the implementation of warranty as promised	HERO ELECTRIC	0	100	38.9	31.1	31.6	4	6.6	3	0.085
	OKINAWA	0	0	61.1	68.9	68.4	4			
Customer satisfaction on the overall warranty service	HERO ELECTRIC	0	45.2	100	28.7	35	4	6.7	3	0.039*
	OKINAWA	0	54.8	0	71.3	65	4			

CHI-SQUARE TEST ON MAINTENANCE SERVICE (n = 625)

| Maintenance Parameters | Company | Column percent (hero electric anther okinawan n = 625 475&190 | | | | | Mean | Chi-square | df | Sig. |
		Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied				
Customer satisfaction on maintenance to solve problem	HERO ELECTRIC	0	0	29.2	28.6	44.1	4	4.009	2	0.135
	OKINAWA	0	0	70.8	71.4	55.9	4			
Customer satisfaction on time it takes for maintenance	HERO ELECTRIC	50	68.8	23.4	23.3	33.3	3	23.030	4	0.000 *
	OKINAWA	50	45	76.6	76.7	66.7	4			
Customer satisfaction on price of maintenance	HERO ELECTRIC	100	55	35.7	28.6	39	4	4.684	4	0.321
	OKINAWA	0	45	64.3	71.4	61	4			
Customer satisfaction in the overall maintenance service	HERO ELECTRIC	100	37	26.1	26	51.3	4	10.075	4	0.039 *
	OKINAWA	0	63	73.9	74	48.7	4			

CHI-SQUARE TEST FINDINGS: (n = 625)

- Significant at p = 0.05 level of significance; p = refers to probability Source: Own survey, 2021 for the warranty period, warranty maintenance and maintenance cost in warranty service. **Since these value is larger than the value in the table, we can reject the null hypothesis at the significance level of 0.05.** As a result, there are significant impact in the customer satisfaction in terms of warranty information cleanliness, warranty duration, and overall warranty service.

- But, customer satisfaction on guarantee performance as promised showed a negligible result (0.085), it showed no difference between the two companies in customer expectations of " After Sales Service " its effect and component does not vary irrespective with the companies.

Also , once the calculated value is higher than expected value , the null hypothesis is rejected , so its evident that " Customer Service Parameters
Have great impact on the Customer Satisfaction , in turns loyalty ".

From above , we may reject the Null Hypothesis of " No linkage of Customer Satisfaction and Loyalty " and hence it is proved that " There is a great relation of
After Sales Parameter on the Customer satisfaction which is the major cause for creating Loyalty among the Customers ".
Also , the components of the " After Sales Service has same impact on the different company and different models with difference potency .
Hence , Alternate Hypothesis is rejected in second assumption assumption.

Conclusion

According to the results , customer needs attentive and focused service as "maintenance, spare parts supply, and Inspection, " found close to the classification of one-way requirements for customers of Hero Electric and Okinawa after-sales service. These has greater impact even with small changes. Washing in Okinawa is an attractive attribute which can increase the customer delight .

Warranty will not increase satisfaction in both the companies but if reduced , will impact the dissatisfaction very high.

Documentation and on line services has indifferent attitude in both the companies , if have OK but if does not have , will not increase or decrease dissatisfaction. This effect is common in both the companies customers although potency varies .

Also , corporate customers may have same expectation but different perceptions towards the same service depending on the Service Quality level.

Its also evident and Proved that " After Sales Service elements have the Direct impact Customer Satisfaction and hence Loyalty " irrespective of the company , model "etc , also , the customer satisfaction parameters have the same effect on Customer satisfaction although potency vary in a little extent.

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