A Study on Impact of Customer Experience and Environment Concern on Customer Engagement Towards Electric Bikes with Special Reference to Hyderabad city.

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ABSTRACT

Since a decade the society is witnessing the tremendous change in awareness, preference and usage of products and services by the customer. The environmental concern of the customers is igniting an idea of using eco-friendly products. So, in connection to it, this paper is mainly focused on exploring the impact of customer experience and environmental concern on customer engagement towards electric vehicles. This study stands unique among the relevant literature in the same area by adopting environmental concern as one of the independent variables. The people who are using e-bikes were considered as population for the study. The sample had been drawn from Hyderabad city. Further, factor analysis and regression were adopted to analyse the data. The results of the study indicate that the two independent variables were proved to have significant positive effect on customer engagement. The findings of the study provide more valuable insights to manufacturers of electric vehicles.

Keywords: Customer Experience, Customer Engagement, Environmental Concerns, Electric Vehicles and e-bikes.

Introduction:

Concerns about the environment are forcing the government and customers to investigate alternate fuel sources for vehicles. Manufacturers and consumers in India are offered a variety of financial and non-financial incentives by the Indian government. Manufacturers are financially compensated for expanding their investment in electric car production. To fulfil future demand, Indian manufacturers like as Maruti Suzuki, Bajaj Auto, Tata Motors, and Mahindra & Mahindra intend to offer a variety of electric car models(Ali & Naushad, 2022).

Despite the growth of the Indian automobile industry, manufacturing businesses are more effective in fulfilling changing client requirements. India's electric car population is growing at a 37.5 percent annual pace. (Manickam N, 2017). Furthermore, the government is increasingly concerned about electric vehicles (B. K. Talukdar& B. C. Deka, 2021) and charging stations. The charging station arrangement has been recommended in order to optimise the charging stations and deliver the greatest power as required (S. Deb, K. Tammi, K. Kalita and P. Mahanta, 2019).

Government pollution standards, financial and non-financial incentives, government policy, the pricing of electric vehicles, and charging infrastructure are all proven to be key factors of electric vehicle adoption (Singh, V&Vaibhav, S, 2020). In order to encourage the use of electric vehicles, the present Indian government envisions a pollution-free commercial and private transportation system. Customers' participation, experience, and environmental concerns are all essential elements in the adoption of electric vehicles.

Review of literature:

The primary motivation for the government's efforts to encourage the use of electric vehicles is to save the environment. Electric vehicles can aid in the improvement of air quality. Government financial incentives, industry growth, and market demand patterns are all important factors in the adoption of electric cars (Hertzke, Müller, Schenk, & Wu, 2018). To stimulate quick adoption among potential consumers, the government must provide market- and customer-friendly policies such as a flexible regulatory framework, tax benefits, and other financial incentives (Jin, L.; Searle,& S.; Lutsey, N, 2014. The cost of the battery has decreased as a result of technological advancements, lowering the overall cost of electric vehicles. As a result, electric vehicles will become more inexpensive, and buyers will quickly accept those (Holms, A. &Argueta, R, 2010). Financial rewards come in a range of shapes and sizes (Siddiqui, T, Naushad,& M.; Farooque, 2021). Customers are encouraged to acquire an electric vehicle since financial incentives are available.

Customers will evaluate charging infrastructure, compatibility of charge points, and the availability of charging stations when purchasing an electric vehicle (Hardman, et al., 2018). Customers prefer charging stations located outside of their homes, businesses, and public spaces (Globisch, Plötz, Dütschke, & Wietschel, 2019). Customers are willing to switch to electric automobiles as environmental worries continue to rise (Pierre, Jemelin, & Louvet, 2011, 4, 511–522). Customers who are concerned about the environment and want to save money on gasoline are more inclined to buy an electric vehicle. Customers that are environmentally conscious exhibit a preference for electric automobiles (Schuitema, Anable, Skippon, & Kinnear, 2013,). When it comes to buying an electric vehicle, cost is a major consideration (Lieven, Mühlmeier, Henkel, & Waller, 2011,). Furthermore, while acquiring an electric vehicle, the initial purchase price is an important factor to consider (Lane, B. &Potter, S, 2007.

Researchers in India and overseas have given increasing attention to buying habits and intentions connected to electric vehicles in recent years due to the blooming expansion of the electric vehicle sector. According to research, Indian customers are the most likely to

purchase electric vehicles (Jui-CheTu& Chun Yang, 2019). Energy conservation and environmental preservation are the primary reasons for 40% of people to acquire electric automobiles. Consumers' value pricing above everything else, but they also consider interior trimmings, storage capacity, and car engine performance. Consumers with a higher level of education favour hybrid automobiles in terms of market share (He,L., Chen,&W.; Conzelmann, G, 2012)

Methodology:

a. **Objectives**

    i. To study the demographic profile of the respondents.

    ii. To find correlation between the independent constructs i.e., Environmental concern and Customer Experience.

    iii. To study the impact of environmental concern on customer engagement towards e-Bikes.

    iv. To study the impact of Customer experience (rational and emotional factors) on customer engagement towards e-bikes.

b. **Sample Size**

The population for the present study is the users of e-Bikes in Hyderabad city. Simple random sampling technique was adopted to draw required sample from the population. Based on the Cochran's sample formula, the sample size for the present study is fixed as 240.

As a part of data collection, the structured questionnaires were spread to 315 respondents throughout study area. Out of which, the researcher identified that only 240 responses are completely filled. Hence, the researcher considered 240 as a sample size.

c. **Statistical tools adopted**

For successful accomplishments of all objectives of the study, Bivariate Correlation, Multiple regression was adopted.

Analysis:

a. <u>Objective 1</u>: To study the demographic profile of the respondents.

The table 1 is depicting the demographic wise classification of the respondents.

Table 1: **Classification of the respondents**

		Frequency	Percent
Age	Below 20 Years	17	7.4
	20-30 Years	89	38.7
	30-40 Years	86	37.4
	40-50 Years	27	11.7
	Above 50 Years	11	4.8
	Total	**230**	**100.0**
Gender	Male	139	60.4
	Female	91	39.6

	Total	**230**	**100.0**
Marital Status	Married	134	58.3
	Unmarried	96	41.7
	Total	**230**	**100.0**
Educational Qualification	Diploma	38	16.5
	Under Graduate	70	30.4
	Post Graduate	122	53.0
	Total	**230**	**100.0**
Occupation	Business	15	6.5
	Salaried	196	85.2
	Retired	12	5.3
	Home Maker	7	3.0
	Total	**230**	**100.0**
Income	Below 10000	5	2.2
	10001-20000	14	6.1
	20001-30000	113	49.1
	Above 30000	98	42.6
	Total	**230**	**100.0**

Out of 230 respondents, both 20-30 and 30-40 years occupied lion share with 38.7% and 37.4% followed by 40-50 years with just below 12%. Below 20 years age group occupied 7.4% and the leftover (4.8%) belongs to Above 50 years.

Among the sample size drawn from the population, 60.4% of sample occupied by Male respondents and 39.6% of the respondents were females. Also, it is observed from table 2 is that, out of 230 respondents, 134 were married and 96 were unmarried.

Majority of the respondents i.e., 53% have completed post-graduation and 30.4% respondents possess under graduation followed by diploma holders with 16.5%. Further it is also observed that the 85.2% of the respondents are salaried and the remaining 15% consists of retired, business and home makers. The table 2 is portraying frequency distribution of the respondents with respect to Monthly Income. Out of 230 respondents, 113 (49.1%) are having their income between 20001-30000/-, 98 (42.6%) respondents are earning in the range above 30000/-. The respondents whose income is in the range of 10001 – 20000 are 14 (6.1%). Just above 2% of the respondents were recorded as below 10000 income.

b. <u>Objective 2:</u> To find correlation between the independent constructs i.e., Environmental concern and Customer Experience.

Table2: Correlations				
		Envi_Concern	Rational_Factors	Emotional_Factors
Envi_Concern	Pearson Correlation	1	.060	.727[**]
	Sig. (2-tailed)		.364	.000

		230	230	230
Rational_Factors	N	230	230	230
	Pearson Correlation	-.060	1	-.110
	Sig. (2-tailed)	.364		.096
	N	230	230	230
Emotional_Factors	Pearson Correlation	.727**	-.110	1
	Sig. (2-tailed)	.000	.096	
	N	230	230	230

Relationship between Envi_Concern and Rational_Factors

From the correlation table, it is observed that the correlation coefficient (0.060) of environmental concern and rational factors is proved as insignificant. Hence, these two variables in the study are not having any dependency on each other.

Relationship between Envi_Concernand Emotional Factors

From the table, the coefficient correlation value (0.727) of environment concern and emotional factors is a positive value which indicates the positive relationship between the two variables. The significant value is less than 0.01 and it is proving that the relationship between the variables is statistically significant at 1% level of significance.

Relationship between rational factor and Emotional Factors

From the correlation table, it is observed that the correlation coefficient (-.110) of rational and emotional factors is proved as insignificant. Hence, these two variables in the study are not having any dependency on each other.

c. <u>Objective 3:</u> To study the impact of environmental concern on customer engagement towards e-Bikes.

To test the impact of environmental concern on customer engagement, the researcher considered the factors of environmental concern as independent variables for the Multiple Regression analysis. This analysis gives more clarity on predators' performance. Through the result of this test, one can understand the impact level of each independent variable on dependent variable.

H_{03}: There is nosignificant impact of environmental concernon customer engagement

H_{a3}:There is asignificant impact of environmental concernon customer engagement

The table 3is representing that the combination of factors of environmental concern has 61% effect on dependent variable. The value R^2 (0.374) value of all independent variables from X1 to X4 is demonstrating moderate effect on dependent variable. The adjusted R^2 is contributing 36.3 to the response variable. The F value (33.620) is significant at 1% level of significance.

Table3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612[a]	.374	.363	2.81608

Table 4: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1066.467	4	266.617	33.620	.000[b]
	Residual	1784.320	225	7.930		
	Total	2850.787	229			

Table 5: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.013	.734		6.832	.000
	Envi_Concern1	-1.429	.700	-.292	-2.041	.042
	Envi_Concern2	-.870	.735	-.184	-1.184	.238
	Envi_Concern3	5.442	.794	.597	6.858	.000
	Envi_Concern4	-.429	.685	-.045	-.627	.532
a. Dependent Variable: Customer_Engagement						

From the coefficient table, it is observed that two of the independent variables viz, Envi_Concern1 and Envi_Concern3 has significant effect on dependent variable i.e., customer engagement. The remaining independent items were insignificant in the model. Hence, the null hypothesis is rejected.

d. Objective 4: To study the impact of Customer experience (rational and emotional factors) on customer engagement towards e-bikes.

H04: There is no significant impact of rational factors on customer engagement
The researcher considered the factors of rational factors as independent variables for the Multiple Regression analysis and customer engagement is the dependent construct in the model.

Table 6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
1	(Constant)	.364	.514		.708	.479	

Rational_Factor1	-.710	.396	-.145	-1.794	.074	R = 0.740
Rational_Factor2	1.647	.394	.375	4.180	.000	Adjusted R^2 =
Rational_Factor3	2.644	.356	.560	7.418	.000	0.540
Rational_Factor4	-.203	.289	-.041	-.703	.483	F=68.290
a. Dependent Variable: Customer_Engagement						

From the coefficient table, it is observed that two of the independent variables viz, Rational_Factors2 and Rational_Factors3 has significant effect on dependent variable i.e., customer engagement. The remaining independent items were insignificant in the model. Hence, the null hypothesis is rejected.

H04: There is no significant impact of Emotional factors on customer engagement
The researcher considered the factors of emotional factors as independent variables for the Multiple Regression analysis and customer engagement is the dependent construct in the model.

Table 7: Coefficients[a]						
	Unstandardized Coefficients		Standardized Coefficients			
Model	B	Std. Error	Beta	t	Sig.	
1 (Constant)	22.522	1.300		17.326	.000	R = 0.802
Emotional_Factor1	-3.349	.267	-.754	-12.552	.000	Adjusted R^2 =
Emotional_Factor2	2.802	1.144	.177	2.449	.015	0.636
Emotional_Factor3	.667	.208	.140	3.214	.002	F=80.865
Emotional_Factor4	.389	.468	.058	.833	.406	
Emotional_Factor5	-4.082	.226	-1.023	-18.074	.000	
a. Dependent Variable: Customer_Engagement						

From the coefficient table, it is observed that four of the independent variables viz, Emotional_factor1, Emotional_factor2, Emotional_factor3 and Emotional_factor5 has significant effect on dependent variable i.e., customer engagement. The remaining independent item is insignificant in the model. Hence, the null hypothesis is rejected.

Findings:
- The independent constructs considered for the study were proved low correlation among each other which indicates the exogeneity of each in the model.

- The respondents of the study are having good awareness towards environment. This concern proved to have positive significant impact on customer engagement.
- Capacity of logical thinking of customers is having significant impact on customer engagement towards eBikes.
- It is also noticed from the study that, the emotional factors also impacting customer engagement behaviour towards eBikes.

Conclusion:

The present study covered environmental concern and customer experience's effect on customer engagement. The model which the researcher had taken in the present study is taken with literature support. The statistical result shows that the increase of environmental concern among the people leads to their engagement with the eco-friendly products i.e., eBikes. Further it is also proved in the study that the customer experience in terms of rational and emotional factors also had significant impact on customer engagement. Hence, it is concluded that the customer engagement is prime element which affects by environmental concern and customer experience. This research could also helpthe managers of EV manufacturers in the customization of features thereby making the EV drivingexperience more pleasant for consumers.

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