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TWO-WHEELER CONSUMERS' BEHAVIOUR TOWARDS CUSTOMER SATISFACTION

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Abstract

This original exploratory study was to examine the impact of select exogenous and demographic variables on Customer Satisfaction. As per ACMA May month data, top four brands, namely Hero, Bajaj, Honda and TVS brands were selected for study and 600 two-wheeler consumers' samples collected, using random sampling in Hyderabad. The data were analysed with descriptive statistics, and non-parametric tests, to know the impact of independent and demographic variables on customer satisfaction and found no impact, further given different implications.

Keywords: Customer Satisfaction; Joint Venture Preference; Heritage Design; Technology Development; Safety Features; Corporate Social Responsibility.

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1. Introduction

Automotive Industry, globally, as well as in India, is one of the key sectors of the economy due to its strong forward and backward linkages. In a Global Competitiveness Survey of 104 countries, India ranked only 55th. To address this issue, Competitive landscape of the industry was developed using the Porter (1990) Diamond Framework by India Brand Equity Foundation (2006); Automotive Mission Plan 2006-16 and Automotive Mission Plan 2016-26 – A Curtain Raiser.

1.1. Two-Wheeler Industry - Indian Scenario

The Indian two-wheeler industry attracted worldwide attention after the major reforms (LPG) in 1991 and after, even though it had its beginnings in the late fifties when Enfield set up its plant to

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make 'bullet' motorcycles. A number of foreign players entered the market and prominent among them were Suzuki, Honda, Yamaha and Kawasaki in Joint Venture route, later on some break-ups also observed. Motorcycles became the largest segment (more than 80 per cent) in the two-wheeler industry (refer Table 1), with different segments. The break-ups reasons varied, as a result, Indian companies were forced to invest heavily in research and development for manufacturing indigenously developed models. The Auto market changed dramatically in terms of technology also viz., four-stroke motorcycles, fuel injection motors, looks, benefitted features, power, mileage (fuel economy), environmental compliance, performance, comfort, alternative fuel, and electric two-wheelers. The industry is growing every year due to inadequate public transport, better financing, availability of models, increasing urbanization and increase in skilled youth population and per capita income.

Table 1: Automobile Domestic Sales Trends

Category	**2005-06**	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**	**13-14**	**14-15**	**15-16**	**16-17**
Pass. Vehi	1,143.076	1,379,979	1,549,882	1,552,703	19,51,333	25,01,542	26,29,839	26,65,015	25,03,509	26,01,111	27,89,208	30,46,727
Com. Vehi	351,041	467,765	490,494	384,194	5,32,721	6,84,905	8,09,499	7,93,211	6,32,851	6,14,961	6,85,704	7,14,232
3-Wlrs	359,920	403,910	364,781	349,727	4,40,392	5,26,024	5,13,281	5,38,290	4,80,085	5,31,927	5,38,208	5,11,658
2-Wlrs	7,052,391	7,872,334	7,249,278	7,437,619	93,70,951	1,17,68,910	1,34,09,150	1,37,97,185	1,48,06,778	1,60,04,581	1,64,55,851	1,75,89,511
G. Total	**8,906,428**	**10,123,988**	**9,654,435**	**9,724,243**	**1,22,95,397**	**1,54,81,381**	**1,73,61,769**	**1,77,93,701**	**1,84,23,223**	**1,97,52,580**	**2,04,68,971**	**2,18,62,128**

Source: SIAM

2. Importance of the Study

Customer Satisfaction is a person's emotional feeling of the object, such as good/bad or like/dislike, resulting from comparing a product's performance in relation to his or her product's expectations vs. perceptions based on customer attitude, product performance and service quality. Consumer's satisfaction may be a guide for monitoring and improving the current and potential performance of businesses (Zairi, 2000). Customer satisfaction can be defined in different ways - as a comparison of previously held expectations with perceived product or service performance (Homburg et al.. 2005, Anderson et al., 1994). Customer's satisfaction, leads to customer's loyalty, recommendation and repeat purchase (Wilson et al., 2008).

"Customer satisfaction is an ambiguous and abstract concept and the actual manifestation of the state of satisfaction will vary from person to person and product/service to product/service. The state of satisfaction depends on a number of both psychological and physical variables which correlate with satisfaction behaviors such as return and recommend rate. The level of satisfaction can also vary depending on other options the customer may have and other products against which the customer can compare the organization's products" (www.merchantaccounts.co).

The consumers are the focus activity of the company's marketing orientation, a research on the consumers' needs and their satisfaction is of a greater significance, and to develop a suitable strategy leading to a higher consumer's satisfaction.

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3. Literature Review

Computer-based searches were carried out on on-line databases include, EMERALD, JSTOR, and EBSCO using key words and wildcards symbols. Manual searches were conducted on journal articles' references identified through the online databases search.

Parinda V. Doshi (2016) selected 100 Asian paints customers in Vadodara, through convenient sampling, to analyse the relationship of customer satisfaction with product and services, it also examined the significance of product and services on satisfaction of the customer and thus observes overall satisfaction of the customer of Asian Paint. Relationship of product covered features, durability and variety; the relationship of services covered company services, and its dealers. Results had shown the positive relationship and effect on the product and services with satisfaction of the customers.

Petr Suchánek et al (2014) examined the influence of quality on customer satisfaction and business performance to generate profit in food industry. Satisfaction was examined by survey questionnaires, and the performance was measured by financial data. The sample consisted of 18 enterprises, and received 13,683 correctly and fully completed questionnaires. Authors found a correlation between the main factors, although partial results were due more factors mostly statistically insignificant. Suggests further research should thus examine the influence of the abovementioned factors adding price factor, on company performance as well as mutual relationships and links of individual factors so that it is possible to create a compact unit and a complex model comprising product quality, customer satisfaction and corporate performance.

Dr. Duggani Yuvaraju (2014) studied 100 Honda bikes customer samples through convenient sampling at Tirupati. Analyzed the data using chi-square, percentages and found significance difference between the preferable factors like mileage, pickup, price and design. Suggested more expenditure of TV advts, reduce bike cost, incentive dealers, set up dealer level service centres, home service and accurate service etc.,

Qadeer, Sara (2013) analysed the impact of service quality on customer satisfaction using five managerial interviews, two in Pakistani bank and three in Swedish bank. Findings reveal that quality of service does effect the customer satisfaction up to some certain level as both concepts are distinct and the relationship found between them is casual and the quality of service was affected by various factors such as human interaction, physical environment, value, price, performance etc. It is found that through proper planning and constant monitoring firms can develop effective strategies to improve quality levels and to retain their existing & future customers. Suggested same research with an added variable, the impact of image, can be conducted by using quantitative methodology (customer surveys, questionnaire) to know about customer's perspective on quality and satisfaction.

Karolina Ilieska, (2013) carried out a survey on representative samples of Macedonian passenger and research services quality and customer satisfaction index (CSI) using ServQual model in the Macedonian passenger transport and found CSI 66%< 80.4% -borderline. Suggested, the marketing manager must make bigger efforts and create the new strategies for

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make better condition and develop the services quality like a base factor for passenger satisfactions.

Saraswathi S. (2008) analysed the Post-Sales Service customer satisfaction on 100 samples of various two-wheelers buyers of Hyderabad and Secunderabad. The study was presented in two parts: Part-I, on perception of customers on post-sale-service and Part-II, on ranking of respondents and satisfactory index on post-sale-service of two-wheeler automobile industry. Study found moderate mean values for some dimensions. Hence suggested manufacturers/ dealers to invest highly valuable service staff in the specific problem areas, i.e., specialised skills, satisfaction after the test ride and quality of service.

Zamazalová (2008) mentioned the key factors that affect customer satisfaction and also used to measure customer satisfaction. These factors were product (in terms of its quality, availability etc.); price (convenient payment conditions and others); services; distribution; and image of a product, used for their product differentiation, getting competitive advantage, barriers for switching and providing satisfaction to the customers.
Based on the thorough review of literature, there were evidences to show that product/ service quality, perceived value are strongly related to customer satisfaction and behavioural intentions in goods and services industry.

4. Objectives of The Study

This research study broadly aimed at *identifying the impact of Customer Satisfaction on consumer outcomes.* By improving the Customer Satisfaction (endogenous/ dependent variable) of select brands, inturn increases the demand and the market share of them in the region. Hence, the study had following research objectives:

1) To study the impact of select independent (exogenous) variables on Customer Satisfaction.
2) To examine the impact of demographic variables on Customer Satisfaction.

Based on the above objectives following **two Null Hypotheses** were formulated:
H_1: There is NO influence of exogenous variables (Safety features, Tech. Devt, Joint Venture, Heritage Design, and Corporate Social Responsibility) on Customer Satisfaction.
Sub Hypothesis: If an impact is found, the impact of each variable is the same.
H_2: There is NO influence of Demographic variables (14 items) on Customer Satisfaction.
Sub Hypothesis: If an impact is found, the impact of each variable is the same.

5. Research Methodology

In this exploratory research, Hero, Bajaj, Honda and TVS brand vehicles were selected for study and 600 two-wheeler consumers samples collected, using random sampling, in Hyderabad. A pilot study of 100 consumers of select four brands was collected through questionnaire and received 0.700 as reliability through Cronbach Alpha test. Later, other 500 two-wheeler consumers' data were collected through questionnaire, processed using SPSS version 23 software. For analysis descriptive statistics and non-parametric tests were used. References were noted in APA style.

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6. Limitations

Though every care was taken and all intervening factors considered still, the following limitations were inevitable.

1) The study was confined to two wheeler consumers in Hyderabad only.
2) The study was carried out, on a certain time period and hence it was influenced by prevailing factors during the period.
3) The study was the result of a sample size, considered to enable a smooth conduct and hence was not a total representation of the whole.

7. Period of The Study

The primary data was collected from January to May, 2017 and the secondary data was from 2005-17.

8. Analysis and Results

The following tables were the results of the Primary data analysis on SPSS software version 20.

Hypothesis 1 Testing

Table 2: Descriptive Statistics

Variables	Mean	Std. Deviation	N
Customer Satisfaction	3.60	1.312	600
Safety (Accident Prevention) Features	14.11	3.433	600
Technology Development (TD)	17.75	3.970	600
Heritage (Antique) Design Preference (HD)	13.35	3.606	600
Joint Venture Preference (JV)	16.96	4.512	600
Corporate Social Responsibility (CSR) of the brand	17.02	4.049	600

Source: Primary data

Interpretation: Std. Deviation was 7.20 per cent means independents were intact.

Table 2: Correlations

Variables		Customer Satisfaction	Safety (Acci. Prevn) Features	Tech. Devt	HD (Antique) Preference	Joint Venture Preference	CSR of the brand
Pearson Correlation	Customer Satisfaction	1.000	.267	.260	.205	.163	.282
	Safety Features	.267	1.000	.623	.285	.290	.582
	Tech. Devt.	.260	.623	1.000	.385	.334	.615
	HD (Antique) Pref	.205	.285	.385	1.000	.417	.378
	JV Preference	.163	.290	.334	.417	1.000	.363
	CSR of the brand	.282	.582	.615	.378	.363	1.000
Sig. (1-tailed)	Customer Satisfaction		.000	.000	.000	.000	.000

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	Safety Features	.000		.000	.000	.000	.000
	Tech. Devt	.000	.000		.000	.000	.000
	HD (Antique) Pref	.000	.000	.000		.000	.000
	JV Preference	.000	.000	.000	.000		.000
	CSR of the brand	.000	.000	.000	.000	.000	
N	Customer Satisfaction	600	600	600	600	600	600
	Safety Features	600	600	600	600	600	600
	Tech. Devt	600	600	600	600	600	600
	HD (Antique) Pref	600	600	600	600	600	600
	JV Preference	600	600	600	600	600	600
	CSR of the brand	600	600	600	600	600	600

Source: Primary data

Interpretation: Linearity exists between endogenous and exogenous variables; correlation means (Sig. values) were close to 0.000.

Table 3: Variables Entered/Removeda, b

Model	Variables Entered	Variables Removed	Method
1	CSR of the brand, JV Preference , HD (Antique) Preference, Safety (Accident Prevention) Features, Technology Development[b]		Enter
a. Dependent Variable: Customer Satisfaction			
b. All requested variables entered.			

Table 4: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.327[a]	.107	.100	1.245	1.931
a. Predictors: (Constant), CSR of the brand, JV Preference, HD (Antique) Preference, Safety (Accident Prevention) Features, Technology Development					
b. Dependent Variable: Customer Satisfaction					

Source: Primary data

Interpretation: In this Multiple-Linear-Regression, model summary and overall fit statistics studied. We predict Customer Satisfaction from Independent variables {CSR of the brand, JV Preference, HD (Antique) Preference, Safety (Accident Prevention) Features and Technology Development}. We found that the adjusted R^2 of our model was 0.100 (standard adjusted R^2 value must be above 0.50 =50%), with the R^2 was 0.107. This means that the linear regression explains 10.7 per cent of the variance data. It means that it is not a very good model but it cannot be dumped as well since the F-test shows that the cumulative effect is significant. In Durbin-Watson (DW) test statistic, which is automatically produced with regression analysis, indicates presence of autocorrelation (must be between d = 1.5 to 2.5), here it was d = 1.931. Hence it shows that it does not suffer from autocorrelation and hence data can be used for regression analysis.

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Table 5: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig. (*p*)
1	Regression	110.491	5	22.098	14.247	.000[b]
	Residual	921.308	594	1.551		
	Total	1031.798	**599**			
a. Dependent Variable: Customer Satisfaction						
b. Predictors: (Constant), CSR of the brand, JV Preference, HD (Antique) Preference, Safety (Accident Prevention) Features, Technology Development						

Source: Primary data

Interpretation: F-test of the Linear-Regression indicate that the overall model is statistically significant (F=14.247, *p*=0.000), has the null hypothesis that the model explains zero variance. Hence it was a good model (not a bad model). At least one independent variable was relevantly contributing, to be a good model.

Table 6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.324	.285		4.645	.000		
	Safety (Acci. Prevn) Features	.045	.020	.119	2.270	.024	.547	1.827
	Technology Development	.020	.018	.062	1.123	.262	.494	2.024
	HD (Antique) Preference	.032	.016	.087	1.932	.054	.744	1.344
	Joint Venture Preference	.007	.013	.022	.509	.611	.769	1.301
	CSR of the brand	.043	.017	.134	2.513	.012	.528	1.893
a. Dependent Variable: Customer Satisfaction								

Source: Primary data

Interpretation: The information in the above tables also allows us to check for multi-collinearity in our model. Tolerance should be >0.1 (or VIF <10) for all variables, which they are (VIF <5). Sig. values were nearer to 0.000 in CSR of the brand (0.012), and Safety features (0.024) reveals impact exists; whereas Heritage Design (Antique) preference (0.054), Technology Development (0.262) and Joint Venture Preference (0.611) reveals no impact. Standard 't' value must be above 1.96 and Beta value below 0.05. To find out impact highest Standardised Beta value of CSR of the brand (0.134) and unstandardised Beta value of Safety features (0.045) leads to an extent of 4 units against 100 units, whereas HD (0.032), and Joint Venture preference (0.007) leads to 3 and <1 units against 100 units. There was no multi collinearity problem with the data, because VIF (**Variance Inflation Factor)** value was <5.

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Table 7: Collinearity Diagnostics

Collinearity Diagnostics[a]									
Model		Eigenvalue	Condition Index	Variance Proportions					
				(Constant)	Safety (Acci. Prevention) Features	Tech. Devt	HD (Antique) Preference	JV Preference	CSR of the brand
1	1	5.838	1.000	.00	.00	.00	.00	.00	.00
	2	.056	10.221	.00	.13	.04	.26	.28	.04
	3	.039	12.200	.00	.00	.00	.66	.62	.00
	4	.027	14.756	.94	.02	.01	.03	.08	.13
	5	.022	16.239	.03	.60	.00	.03	.02	.67
	6	.018	18.015	.02	.26	.95	.02	.00	.16
a. Dependent Variable: Customer Satisfaction									

Source: Primary data

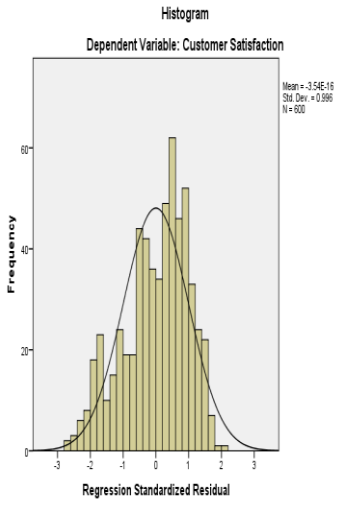
Interpretation: Condition Index was <30. Variance Proportion was highest (0.95) in Technology Development, whereas CSR of the brand (0.67), Heritage Design Preference (0.66), Joint Venture Preferences (0.62) and Safety features (0.60) were instrumental.

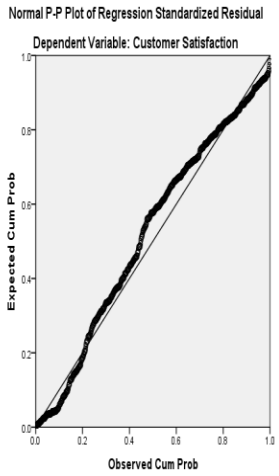
Table 8: Residuals Statistics

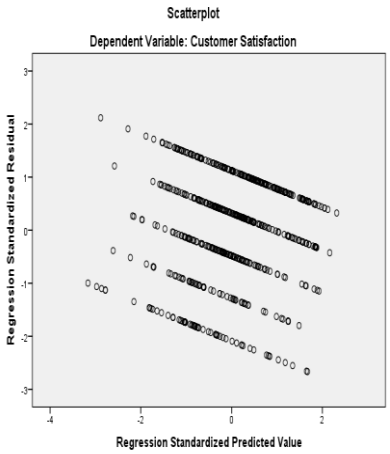
Residuals Statistics[a]					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.24	4.60	3.60	.429	600
Residual	-3.319	2.637	.000	1.240	600
Std. Predicted Value	-3.166	2.315	.000	1.000	600
Std. Residual	-2.665	2.118	.000	.996	600
a. Dependent Variable: Customer Satisfaction					

Source: Primary data

Interpretation: From the Residual Statistics table and a histogram of the standardized residual was based on our model. Note that the unstandardized residuals should be a mean of zero (Assumptions of Linear Regression), and so do standardized predicted values and standardized residuals.







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Interpretation: From the **histogram** we can see some values at the tail ends of the distribution of variable. The Normal **P**robability **P**lot shows, the distribution is normal, because we had seen the points to cluster around the horizontal line and the difference in the tail distributions of the P-P plot. **Scatter plot** indicates that there are no violations of the independence, homoscedasticity and linearity assumptions.

Hypothesis 1 Result: Overall from the above tables it was concluded that there was NO influence of Independent variables {Safety (Accident Prevention) Features, Technology Development, HD (Antique) Preference, JV Preference, and CSR of the brand} on customer satisfaction. Hence Hypothesis 1 was **rejected.**

Hypothesis 2 Testing

The data was of non-linearity, hence the impact of demographic variables on Customer Satisfaction tested with Mann-Whitney test and Kruskal-Wallis Test against a standard sig. value of < 2.5%.

Table 9: Mann-Whitney Test for Gender

Ranks				
Gender		**N**	**Mean Rank**	**Sum of Ranks**
Customer Satisfaction	Male	372	306.18	113898.00
	Female	228	291.24	66402.00
	Total	**600**		

Test Statistics[a]

	Cust. Satisfaction
Mann-Whitney *U*	40296.000
Wilcoxon *W*	66402.000
Z	-1.059
Asymp. Sig (2-tailed) *p*	.290
a. Grouping Variable: Gender	

Source: Primary data

The **Ranks table** is the first table that provides information regarding the output of the actual Mann-Whitney U test. In this case, male had highest mean rank (306.18) compared to female mean rank (291.24). **Test Statistics table** data reveals that customer satisfaction in the female group (*W*=66402.000) was statistically, significantly differ and was higher than the male group (*U* = 40296.000) and *p* = 0.290 was higher than the standard (*p* value <2.5% =0.025).

Interpretation: Gender had no impact on dependent variable (Customer Satisfaction).

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Table10: Mann-Whitney Test for most often, a pillion rider rides with me

Ranks				
Most often, a pillion rider rides with me:		**N**	**Mean Rank**	**Sum of Ranks**
Customer Satisfaction	Yes	335	292.35	97938.50
	No	265	310.80	82361.50
	Total	**600**		

Test Statistics[a]

	Cust. Satisfaction
Mann-Whitney *U*	41658.500
Wilcoxon *W*	97938.500
Z	-1.338
Asymp. Sig. (2-tailed) p	.181
a. Grouping Variable: Most often, a pillion rider	

Source: Primary data

The **Ranks table** shows mean ranks and sum of ranks for the grouping variable: Most often, a pillion rider rides with me tested for Yes or No groups. In this case, No group had highest mean rank (310.80) for Customer Satisfaction than Yes group mean rank (292.35). **Test Statistics table** data, it can be concluded that Customer Satisfaction in the No group (*W*= 97938.500) was statistically, significantly higher than the Yes group (*U* = 41658.500) and *p* = 0.181 was higher than the standard (*p* value <2.5% =0.025).

Interpretation: Pillion driver riding with consumer had no impact on Customer Satisfaction.

Table 11: Mann-Whitney Test for vehicle is shared with

Ranks				
Vehicle is shared with		**N**	**Mean Rank**	**Sum of Ranks**
Customer Satisfaction	Family members & others	450	299.83	134921.50
	Not shared, used myself	150	302.52	45378.50
	Total	**600**		

Test Statistics[a]

	C Stsfctn
Mann-Whitney *U*	33446.500
Wilcoxon *W*	134921.500
Z	-.171
Asymp. Sig. (2-tailed)	.865
a. Grouping Variable: Vehicle shared with	

Source: Primary data

The **Ranks table** shows mean ranks and sum of ranks for the grouping variable vehicle is shared with, tested for Family members and others or Not shared, used by myself groups. In this case, Not shared, used myself had highest mean rank (302.52) for Customer Satisfaction than family members and others (299.83) mean rank. **Test Statistics table** data conclude that Customer

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Satisfaction in the Family members and others (*W*= 134921.500) was statistically, significantly higher than the Not shared, used by myself (*U* = 33446.500) and *p* = 0.865 was higher than the standard (*p* value <2.5% =0.025).

Interpretation: Vehicle sharing had no impact on Customer Satisfaction.

Table 12: Mann-Whitney Test for Gear Status

Ranks				
Gear status		**N**	**Mean Rank**	**Sum of Ranks**
Customer Satisfaction	With gears	343	291.48	99978.00
	Gearless	257	312.54	80322.00
	Total	**600**		

Test Statistics[a]

	Cust Satisfctn
Mann-Whitney *U*	40982.000
Wilcoxon *W*	99978.000
Z	-1.522
Asymp. Sig. (2-tailed)	.128
a. Grouping Variable: Gear status	

Source: Primary data

The **Ranks table** shows mean ranks and sum of ranks for the grouping variable vehicle is shared with, tested for with Gears and Gearless. In this case, Gearless had highest mean rank (312.54) for Customer Satisfaction than with gears (291.48) mean rank. **Test Statistics table** data results suggest, there was statistically difference between the underlying distributions of the Customer Satisfaction, with gears and gearless. Gearless (*W*= 99978.000) was statistically, significantly higher than with gears (*U* = 40982.000) and *p* = 0.128 was higher than the standard (*p* value <2.5% =0.025).

Interpretation: Gear status had no impact on Customer Satisfaction.

Table 13: Mann-Whitney Test for Engine Capacity

Ranks				
Engine capacity		**N**	**Mean Rank**	**Sum of Ranks**
Customer Satisfaction	Below 126 cc	384	309.29	118766.50
	Above 126 cc	216	284.88	61533.50
	Total	**600**		

Test Statistics[a]

	Cust. Satisfctn
Mann-Whitney *U*	38097.500
Wilcoxon *W*	61533.500
Z	-1.711
Asymp. Sig. (2-tailed)	.087
a. Grouping Variable: Engine capacity	

Source: Primary data

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The **Ranks table** shows mean ranks and sum of ranks for the grouping variable: Engine Capacity for below 126cc and above 126 cc. In this case, below 126 cc had highest mean rank (309.29) for Customer Satisfaction than with above 126 cc (284.88) mean rank. **Test Statistics table** data results suggest, there was statistically difference between the underlying distributions of the Customer Satisfaction, below 126cc and above 126 cc. Below 126 cc (*W*=61533.500) was statistically, significantly higher than, above 126cc (*U* = 38097.500) and Asymptotic Sig. value (*p* = 0.087) was higher than the standard (*p* value <2.5% =0.025).

Interpretation: Engine Capacity had no impact on Customer Satisfaction.

Table 14: Mann-Whitney Test for Distance from home to Service centre

Ranks				
Distance from home to service center		**N**	**Mean Rank**	**Sum of Ranks**
Customer Satisfaction	Close by	249	245.33	61087.00
	Far-off	251	255.63	64163.00
	Total	**500**		

Test Statistics[a]

Results/ Outputs	**Cust. Satisfaction**
Mann-Whitney *U*	29962.000
Wilcoxon *W*	61087.000
Z	-.822
Asymp. Sig. (2-tailed)	.411
a. Grouping Variable: Distance from home	

Source: Primary data

The **Ranks table** shows mean ranks and sum of ranks for the grouping variable: Distance from home to service center, tested for close-by and far-off. In this case, far-off had highest mean rank (255.63) for Customer Satisfaction than close by (245.33) mean rank. **Test Statistics table** data suggests, there was statistically difference between the underlying distributions of the Customer Satisfaction, close-by and far-off. Far-off (*W*= 61087.000) was statistically, significantly higher than close-by (*U* = 29962.000) and *p* = 0.411 was higher than the standard (*p* value <2.5% =0.025).

Interpretation: Distance from home to service centre had no impact on Customer Satisfaction.

Table 15: Kruskal-Wallis Test for Age

Ranks			
Age		**N**	**Mean Rank**
Customer Satisfaction	18-30 yrs	416	308.43
	31-45 yrs	132	281.01
	46-60 yrs	39	287.71
	61-75 yrs	13	283.19
	Total	**600**	

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Test Statistics[a]

	Cust. Satisfaction
Chi-Square (χ^2)	3.077
degrees of freedom (df)	3
Asymptotic Significance (*p*)	.380
a. Grouping Variable: Age	

Source: Primary data

The **Ranks table** results indicate that there were statistically significant differences among the four classes of Age. Lowest Mean rank represents highest value; 31-45 years (281.01), 61-75 years (283.19), 46-60 years (287.71) and 18-30 years (308.43) were ranked 1, 2, 3, and 4 respectively. 31-45 years were ranked high. **Test Statistics table** data suggests, Asymptotic Sig. value (p = 0.380) was higher than the Sig. value <2.5% =0.025.

Interpretation: Age had no impact on Customer Satisfaction.

Table 16: Kruskal Wallis Test for Economic Status

Ranks			
Economic Status		**N**	**Mean Rank**
Customer Satisfaction	Middle Class	379	308.85
	Upper Middle Class	170	290.18
	Rich	51	272.86
	Total	**600**	

Test Statistics[a]

	Cust. Satisfaction
Chi-Square	2.968
df	2
Asymp. Sig.	.227
a. Grouping Variable: Economic status	

Source: Primary data

The **Ranks table** results indicate that there were statistically significant differences among the three classes of Economic status. Lowest Mean rank represents highest value; Rich (272.86), Upper-Middle (290.18) and Middle (308.85) were ranked 1, 2 and 3 respectively. Rich were ranked high for their branded product purchases. **Test Statistics table** data suggest, Asymptotic Sig. value (p = 0.227) was higher than the standard (Sig. value <2.5% =0.025).
Interpretation: Economic status had no impact on Customer Satisfaction.

Table 17: Kruskal Wallis Test for Formal Education

Ranks			
Formal Education		**N**	**Mean Rank**
Customer Satisfaction	Below 10	39	306.37
	10-12	119	277.05
	Graduate	284	317.04
	PG & Above	136	293.85
	Professional	22	244.45
	Total	**600**	

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Test Statistics[a]

	Customer Satisfaction
Chi-Square	7.807
df	4
Asymp. Sig.	.099
a. Grouping Variable: Formal Education	

Source: Primary data

The **Ranks table** results indicate that there were statistically significant differences among the five classes of Formal education. Lowest Mean rank represents highest value; Professionals (244.45), 10-12 grade (277.05), PG & above (293.85), below 10 (306.37) and Graduate (317.04) were ranked 1, 2, 3, 4 and 5 respectively. Professionals were ranked high. **Test Statistics table** data suggests, Asymptotic Sig. value (p = 0.099) was higher than the standard (Sig. value <2.5% =0.025).

Interpretation: Education had no impact on Customer Satisfaction.

Table 18: Kruskal Wallis Test for Two-Wheeler Brand Owned

Ranks			
Two-wheeler brand owned		**N**	**Mean Rank**
Customer Satisfaction	Hero	164	294.30
	Bajaj	98	291.64
	Honda	187	300.35
	TVS	85	305.12
	Others	66	323.53
	Total	**600**	

Test Statistics[a]

	Customer Satisfaction
Chi-Square	1.806
df	4
Asymp. Sig.	.771
a. Kruskal Wallis Test	
b. Grouping Variable: Two-wheeler brand owned	

Source: Primary data

The **Ranks table** results indicate that there was statistically significant difference among the five classes of two wheeler brand owned. Lowest Mean rank represents highest value; Customer Satisfaction of Bajaj (291.64), Hero (294.30), Honda (300.35), TVS (305.12) and others (323.53) were ranked 1, 2, 3, 4 and 5 respectively. Bajaj motorcycles were ranked high. **Test Statistics table** data suggests, Asymptotic Sig. value (p = 0.771) was higher than the standard (Sig. value <2.5% =0.025).

Interpretation: Two wheeler brand owned had no impact on Customer Satisfaction.

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Table 19: Kruskal Wallis Test for Occupation

Ranks			
Occupation		**N**	**Mean Rank**
Customer Satisfaction	Student	327	252.24
	Professional	70	260.11
	Govt. Employee	23	212.72
	Private Employee	61	249.19
	Business	19	235.13
	Total	**500**	

Test Statistics[a b]

	Customer Satisfaction
Chi-Square	2.286
df	4
Asymp. Sig.	.683
a. Kruskal Wallis Test	
b. Grouping Variable: Occupation	

Source: Primary data

The **Ranks table** results indicate that there was statistically significant difference among the five classes of Occupation. Lowest Mean rank represents highest value; Govt. employee (212.72), Business (235.13), Private Employee (249.19), Students (252.24) and Professional (260.11) were ranked 1, 2, 3, 4 and 5 respectively. Govt. employees were ranked high. **Test Statistics table** data suggest, Asymptotic Sig. value (p = 0.683) was higher than the standard (Sig. value <2.5% =0.025).

Interpretation: Occupation had no impact on Customer Satisfaction.

Table 20: Kruskal Wallis Test for Length of usage

Ranks			
Length of usage		**N**	**Mean Rank**
Customer Satisfaction	1-3 yrs	240	248.17
	3-5 yrs	143	263.39
	Above 5 yrs	117	239.53
	Total	**500**	

Test Statistics[a b]

	Customer Satisfaction
Chi-Square	1.993
df	2
Asymp. Sig.	.369
a. Kruskal Wallis Test	
b. Grouping Variable: Length of usage	

Source: Primary data

The **Ranks table** results indicate that there was statistically significant difference among the three classes of length of Usage. Lowest Mean rank represents highest value; Above 5 years (239.53), 1-3 years (248.17) and 3-5 years (263.39) were ranked 1, 2, and 3 respectively. Above

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5 years were ranked high. **Test Statistics table** data suggest, Asymptotic Sig. value (p = 0.369) was higher than the standard (p value <2.5% =0.025).

Interpretation: Length of usage of vehicle had no impact on Customer Satisfaction.

Table 21: Mann-Whitney Test for Marital Status

Ranks				
Marital Status		**N**	**Mean Rank**	**Sum of Ranks**
Customer Satisfaction	Married	121	221.50	26801.50
	Unmarried	356	244.95	87201.50
	Total	**477**		

Test Statistics[a]

	Customer Satisfaction
Mann-Whitney *U*	19420.500
Wilcoxon *W*	26801.500
Z	-1.668
Asymp. Sig. (2-tailed)	.095
a. Grouping Variable: Marital Status	

Source: Primary data

The **Ranks table** shows mean ranks and sum of ranks for the grouping variable: Marital Status tested for Married and Unmarried. In this case, Unmarried had highest mean rank (244.95) for Customer Satisfaction than married (221.50) mean rank. **Test Statistics table** data results suggest, there was statistically difference between the underlying distributions of the Customer Satisfaction, for married and unmarried. Unmarried (W= 26801.500) was statistically, significantly higher than married (U = 19420.500) and Asymptotic Sig. value (p = 0.095) was higher than the standard (p value <2.5% =0.025).

Interpretation: Marital status had no impact on Customer Satisfaction.

Table 22: Mann-Whitney Test for Brand Recall:

Ranks				
Brand Recall (Vehicle was repaired or replaced by Orgn)		**N**	**Mean Rank**	**Sum of Ranks**
Customer Satisfaction	Yes	287	306.50	87964.50
	No	313	295.00	92335.50
	Total	**600**		

Test Statistics[a]

	Customer Satisfaction
Mann-Whitney *U*	43194.500
Wilcoxon *W*	92335.500
Z	-.839
Asymp. Sig. (2-tailed)	.402
a. Grouping Variable: Brand Recall	

Source: Primary data

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The **Ranks table** shows mean rank and sum of ranks for the grouping variable Brand Recall: tested for Yes or No classes. In this case, Yes class had highest mean rank (306.50) for Customer Satisfaction than with No (295.00) mean rank. **Test Statistics table** data results suggest, there was statistically difference between the underlying distributions of the Customer Satisfaction, yes or no of Brand Recall. Yes option (*W*= 92335.500) was statistically, significantly higher than No option (*U* = 43194.500) and Asymptotic Sig. value (*p* = 0.402) was higher than the standard (*p* value <2.5% =0.025).

Interpretation: Brand Recall had no impact on Customer Satisfaction.

Hypothesis 2 Result

Decision, since p-value was < 0.025, we **reject** the null hypothesis. There was no impact of (Demographic variables) Gender, Pillion driver, Gear status, Engine capacity, Distance from home to service centre, Vehicle sharing, Age, Economic status, Education, vehicle Brand owned, Occupations, Length of usage, Marital status and Recall of vehicles on Customer Satisfaction.

9. Findings

The following observations were found on Customer Satisfaction

1) Linearity exists between endogenous and exogenous variables, correlation means (Sig values) were close to 0.000
2) Std. Adjusted R^2 value was 0.100 (must be >50%), hence it was a very good model.
3) F-test results of Linear-Regression were F=14.247, *p*=0.000. Hence it was a good model (not a bad model). At least one exogenous variable was relevant and contributing, to be a good model.
4) Sig. values were nearer to 0.000 in CSR of the brand (0.012), and Safety features (0.024) reveals impact exists; whereas Heritage Design (Antique) preference (0.054), Technology Development (0.262) and Joint Venture Preference (0.611) reveals no impact. Standard 't' value must be above 1.96 and p- value below 0.05. To find out impact highest Standardised Beta value of CSR of the brand (0.134) and unstandardised Beta value of Safety features (0.045) leads to an extent of 4 units against 100 units, whereas HD (0.032), and Joint Venture preference (0.007) leads to 3 and <1 units against 100 units. There was no multi collinearity problem with the data, because VIF (**Variance Inflation Factor)** value was <5.
5) Condition Index was <30. Variance Proportion was highest (0.95) in Technology Development, whereas Heritage Design Preference and Joint Venture Preferences were instrumental.
6) The data was of non-linearity, the impact of 14 demographic variables on Customer Satisfaction tested with Mann-Whitney test and Kruskal-Wallis test against Significance (*p*) value of <2.5% (0.025) and found 14 variables had **NO** impact on Customer Satisfaction.

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10. Conclusion

After the two mentioned hypotheses testing, which were rejected based on collected quantitative data. Hence both the Objectives were met. To confirm those results, 20 Senior (citizens) consumers were contacted for qualitative input, which proved the same.

11. Future/Research Implications

Our research should be seen as a preliminary attempt at addressing an issue that has important implications for services marketing theory and practice. Any preliminary attempt will involve a number of limitations. However, acknowledgement of these limitations suggests new directions for future studies.

1) Why the Chinese (world's largest two-wheeler industry) two-wheeler firms haven't been able to enter the Indian markets successfully? What challenges a new entrant has to face in the industry? Can Indian auto companies, manufacture in China using Chinese suppliers base to dent Chinese companies and export to other countries for the "lower end customers" market share? Can the answer be applied to other industries to safeguard Indian industries (avoid/ control Chinese competition)?
2) Develop South-India centred cluster(s), due to present Industry concentration in North-India (NCR-Delhi: Noida, Gurgaon, Manesar; Mumbai: Aurangabad, Nashik, Pune; Gujarat: Halol, Sanand; Kolkata; Bengaluru).

12. Managerial Implications

Based on collected data analysis, manufacturer has to focus more on Technological Developments, Safety features, and CSR activities, but less on Heritage (Antique) Design Preference and Joint Ventures.

13. Originality/Value

From practical angle, companies must improve Customer Satisfaction to enjoy the substantial competitive and economic advantages provided by it.

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References

[1] Anderson, E. W., Formelo, C., Lehmann, D. R. (1994). Customer Satisfaction, Market Share, and Profitability: Findings from Sweden. *Journal of Marketing*, Vol. 58, No. 3, p. 53-66.
[2] Doshi , Parinda V. (2016) Role of product and services on satisfaction of customers: A Case study of Asian Paints. *International Journal of Research in Commerce & Management 1*, Vol. 7, Issue-06. ISSN 0976-2183
[3] Dr. Duggani Yuvaraju & Prof. S. Durga Rao (2014) Customer Satisfaction towards Honda Two Wheelers: A Case Study in Tirupati. *OSR Journal of Business and Management, Vol. 16*(5). Ver. I (May), PP 65-74

[4] Homburg et al. (2005) Do satisfied Customers Really Pay More? A Study of the Relationship between Customer Satisfaction and Willingness to Pay. *Journal of Marketing* 69(2): 84-96.
[5] Karolina Ilieska, (2013) Customer Satisfaction Index – as a Base for Strategic Marketing Management, *TEM Journal*, 2(4), 327-331.
[6] Ministry of Heavy Industries and Public Enterprises. (2006). *Automotive Mission Plan 2006-2016*, Govt of India, New Delhi.
[7] Petr Suchánek, Jiří Richter, Maria Králová (2014) Customer Satisfaction, Product Quality and Performance of Companies, *Review of Economic Perspectives – Národohospodářský Obzor, Vol. 14* (4), pp. 329–344, DOI: 10.1515/revecp-2015-0003
[8] Qadeer, Sara (2013) Service Quality & Customer Satisfaction: A case study in Banking Sector. Masters thesis. November – 2013, Second Cycle, University of Gavle, Sweden
[9] Saraswathi S. (2008). Customer satisfaction on post-sales service with reference to Two-Wheeler Automobile Industry. *The ICFAI Journal of Consumer Behaviour*, III (2). June 2008, Hyderabad: The ICFAI University Press. India. pp 32-48.
[10] Wilson, A., Zeithamal, V.A., Bitner, M.J., Gremler, D.D., (2008). Services Marketing. McGraw-Hill Edn.
[11] Www.merchantaccounts.co/merchant-account-glossary.htm#C Accessed on 19 January, 2018. At 09.52 pm
[12] Zairi, M., 2000. Managing Customer Satisfaction: A best practice perspective. TQM Mag. 12 (6), 389–394.
[13] Zamazalova, M. (2008). Spokojenost zákazníka. *Acta Oeconomica Pragensia*, Vol. 16, No. 4, p. 76-82.

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