

# A Discriminant Analysis of the Social Factors Influencing the Consumer Behaviour in the Two -Wheeler Market in India-An Empirical Study

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## Abstract

This article examines the development of discriminant functions which will best discriminate between the urban and rural consumers with respect to the social factors influencing the consumer behavior in the two-wheeler market in India. The paper further highlights the importance of various promotional tools in the purchase of two wheelers in India. The two-wheeler market in India is the largest segment of the domestic auto industry in terms of absolute numbers. From a semi luxury product for the urban middle class in the eighties and earlier, the two- wheeler has now become not only the favorite mode of personal transport but also the most coveted personal household durable possession among nearly all consumer classes, except perhaps the most affluent. The leading vehicle in the two-wheeler segment is the stylish, fuel-efficient and sturdy 4-stroke motorcycle, the purchase of which is influenced by various social factors. A descriptive research using stratified random sampling method was undertaken and the study was conducted using both primary and secondary data. It was concluded that the 'social status' factor was the most effective social factor in discriminating among the urban consumers and 'primary reference group' factor was the most effective social factor in discriminating among the rural consumers in the choice of a two-wheeler brand.

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**Index terms**— two-wheeler, rural, urban, discriminant analysis, social factor

## 1 I. Introduction

he world automobile industry has been witnessing an unprecedented scale of change since 1991 when liberalization took place in India for the first time. The wave of globalization has directly affected the international automobile industry and the buyer behavior in the two-wheeler market, and the promotional strategies associated with it has accelerated the global reorganization of it. The study of buyer behavior has assumed paramount importance in the automobile industry in general and in the two-wheeler market in particular. It has thrown open several challenges to the two-wheeler manufacturers and its dealers in formulating effective and competitive promotional strategies for growth and market acceptance. It fosters the process of understanding why a customer or a buyer makes a two -wheeler purchase. Without such an understanding the industry will find it very difficult to respond to the needs and wants of the customers. It is challenging to understand how customers respond to the plethora of promotional tools used by marketers in the marketing of bikes. If the two-wheeler manufacturers and its dealers could understand these customer preferences and perceptions better than their competitors then it is potentially a significant source of competitive advantage for the bike makers. Hence two-wheeler makers spend considerable time, money and effort to learn consumer behavior. The term consumer behavior is defined as the behavior that consumers display in searching for, purchasing, using, evaluating and disposing of products and services that they expect will satisfy their needs.

Thus consumer behavior focuses on how individuals make decisions to spend their available resources like time, money and effort on consumption related items.

## 2 II. Automobile Industry: An Indian Scenario

The evolution of the automobile industry sparked off from the rudimentary origins of transportation. Before the invention of the automobiles, the main mode of man's travel was on foot. He had attempted to find out some mechanical device for his transport. The first of such attempts is recorded to be in 3500 B.C. It is on record that the Sumerians who lived in the river basins of Tigris and Euphrates had travelled by a mode of transport made on wheels. Later on, Kings and others used palanquins borne by men; and chariots pulled by horses and other animals, for their travel. Domestic animals like cows, donkeys, horses and elephants were made use of for pulling cartloads. References to such vehicles are galore in the epic works of literature. The horse-carts and bullock-carts are still in force in certain places. 1

## 3 III. Two-Wheeler Industry in India

This segment comprises the largest segment of the domestic auto industry in terms of absolute numbers. 1 From a semi luxury product for the urban middle class in the eighties and earlier, the two wheeler has now become not only the favorite mode of personal transport but also the most coveted personal (household durable) possession among nearly all consumer classes, except perhaps the most affluent. The leading vehicle in the two-wheeler segment is the stylish, fuel-efficient and sturdy 4-stroke motorcycle. The two-wheeler segment is divided into 5 major product classifications: (1) Mopeds; (2) Motor cycles; (3) Scooters; (4) Step thrus and (5) Ung geared scooters.

Scooters: Scooter is a vehicle with an engine and two small wheels that looks like a small motorcycle. Scooters are perceived as more of a utility vehicle or a family vehicle than an entertained vehicle in India. It has more safety features than a motorcycle e.g. the front metallic cover that prevents the rider's legs from an injury on collision or some accident.

Motor Cycles: The major players in the motorcycle market are: (1) Bajaj Auto Ltd., (2) TVS (Tiru Venkata Sundaram Iyengar) Suzuki, (3) Hero Honda, (4) Escorts Yamaha and (5) Royal Enfield. Motorcycles are mainly of two types: (1) 2-stroke motorcycle; (2) 4-stroke motorcycle: In a 2-stroke motorcycle, the engine works on a two stroke cycle viz. 1) compression cum suction and (2) expansion cum exhaust. In a 4-stroke motorcycle, the engine works on a 4 stroke cycle viz (1) suction stroke, (2) compression stroke (3) Expansion stroke and (4) exhaust stroke.

## 4 Mopeds:

The market for mopeds has not been witnessing much activity in the last few years i.e. from 2000 to 2014. This is mainly on account of the gradual shift in the demand pattern which has seen consumers buying the other categories of two wheelers, motorcycles segment gaining the most. This shift is mainly due to relatively stable prices of scooters and motorcycles and rising incomes at the rural level with increasing number of households.

## 5 IV. Research Problem

A two-wheeler purchase is influenced by several factors like social, economic, technological and aesthetic factors. Marketers do not take these factors into consideration for marketing their two-wheelers for lack of awareness. Hence, an attempt has been made to investigate into those social factors that are responsible for the influence of a two-wheeler purchase decision and to determine the most important promotional tool that influenced a two-wheeler purchase decision.

## 6 a) Research Question

Consumer behavior with respect to the purchase of a two-wheeler has the interplay of several social factors like primary reference groups, secondary reference groups, role in the society, and social status. There are certain independent variables like age, education, income etc. which have discriminating impact on consumers' behavior. This study is meant to examine those factors which are effective in discriminating among the urban and rural groups of consumers in the choice of a two-wheeler brand by applying discriminant analysis.

## 7 b) Objectives of the Study

1. To identify the factors that influence the purchase of two-wheelers in the Malabar region of Kerala 2. To find out the most effective factor in discriminating among the urban and rural groups of consumers in the choice of a two-wheeler brand. 3. To analyze the importance of various promotional tools in the purchase of two wheelers in the Malabar region of Kerala.

V. Review of Literature According to this study Television Ads, Internet and Hoardings are the biggest sources of information on two-wheelers to the customers. 2. Bhuvanesh Kumar and Kavitha (2015) undertook a study titled 'Customer Satisfaction towards Honda Activa with Special Reference to Pollachi Taluk', with an aim to identify the factors influencing consumers to purchase Honda Activa and also to study the effect of advertisement

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on the purchase decision of the customers. This study revealed that advertisements play a vital role in the purchase decision of the customers and hence the frequency of Ads shall be increased to create a rapid impact in their minds that lasts for a long time.

## **8 Chandu Ravi Kumar and N. D. N Swamy (2015)**

made an empirical study titled 'A Study on Consumer Satisfaction towards TVS Motors with Special Reference to Guntur City' to measure the consumers buying behavior towards the different models of TVS two-wheelers and to study the factors influencing the consumers to purchase the TVS two-wheelers. As per their findings television is the biggest source of information regarding twowheelers followed by internet and hoardings.

## **9 VI. Conceptual Framework**

The conceptual framework has been developed with the help of major social factors that have been derived from the review of literature and qualitative data. The framework consists of dependent and independent variables. The research aims to identify important social factors influencing the purchase of a two-wheeler. The above conceptual framework summarizes the aim of this research in which it intends to study the social factors that influences the purchase of a two-wheeler.

At this stage of research, the research hypothesis could be clearly stated.

The following research hypothesis will be tested.

### **10 a) Hypothesis of the Study**

HO: There is no significant relationship between social factors and a two-wheeler purchase decision.

H1: There is significant relationship between social factors and a two-wheeler purchase decision.

### **11 b) Methodology**

This is a descriptive study of the buyer behavior in the two-wheeler market in the Malabar region of Kerala. The study is based on both primary and secondary data which are analyzed using statistical tools like Percentage analysis, Chi-square analysis, and Discriminant analysis to draw conclusions.

### **12 c) Sources of primary and secondary data**

Since most of the information necessary to fulfill the objectives of the study was not available from secondary sources, the researcher mainly based his study on relevant primary data which were collected by conducting a field survey from the selected sample units in Kerala. The primary data were collected from 300 twowheeler owners through a structured interview schedule. Out of the 300 two-wheeler owners, 210 were from the urban area and 90 were from the rural area. The secondary data necessary for the study were compiled from published and unpublished sources.

### **13 d) Sample Frame**

The present study pertains to two-wheeler manufacturers, two-wheeler dealers and the two-wheeler owners in Kerala. Thus, a sample comprising 300 two-wheeler owners was selected from the sample frame of the study.

### **14 e) Sample Design**

The study adopts a stratified random sampling method for sample selection. The Malabar region of Kerala was stratified into five districts viz., Malappuram, Kozhikode, Wayanad, Kannur and Kasaragode. Out of the five districts in the Malabar region of Kerala the researcher chose three districts viz., Malappuram, Kozhikode and kannur by way of simple random sampling method. The researcher then selects 100 sample units (two-wheeler owners) from each of these three districts viz., Malappuram, Kozhikode and kannur by way of simple random sampling technique. Thus altogether, 300 sample units (two-wheeler owners) were selected for the study. The type of study undertaken by the researcher is a descriptive study.

### **15 f) Area of the Study**

The Malabar region of the state of Kerala has been chosen by the researcher as his area of the study. The Malabar region of Kerala comprises the following five districts viz., Malappuram, Kozhikode, Wayanad, Kannur and Kasaragod.

## **16 VII. Results of the Analysis a) Brand of two-wheelers (bikes) owned in the Malabar region of Kerala**

The major players in the two-wheeler market are Bajaj Auto Limited, Hero Honda Limited, TVS Suzuki Limited and Yamaha Limited. There are several brands in the two-wheeler (150 cc) market in Kerala viz., Bajaj Pulsar, Bajaj Discover, Bajaj Platina, Hero Honda Splendour, Hero Honda Passion, Honda Conceptual Framework

## 17 Qualitative Approach

Literature Review

Interviews with owners of two-wheelers

## 18 Models of two-wheeler purchase decision process

## 19 Identification of social factors

Unicorn, Honda Hunk, TVS Victor, TVS Suzuki, and Yamaha CBZ. The two-wheeler market in Kerala is abundant in motor bikes, scooters, scooterettes and mopeds with a wide variety of models and attractive features catering to the tastes and preferences of consumers in the Malabar region of Kerala. These two-wheelers are sold through dealer outlets at various places convenient to the public at large. As it could be seen from Table 1 below, 36.0% of the twowheeler owners own Bajaj bikes, 32.3% own Hero Honda bikes, 21.7% own TVS bikes, 6.3% own Yamaha bikes, and 3.7% own other two-wheelers. Thus, majority of the two-wheeler buyers in the Malabar region of Kerala prefer the brand of Bajaj.

## 20 Source: Survey Data b) Promotional tools influencing the two-wheeler purchase decision in the Malabar region of Kerala

A purchase decision in the two-wheeler market in the Malabar region of Kerala could be influenced by promotional tools like newspaper, television, radio, internet, magazines, word of mouth, test rides, exchange melas and others. The extent to which the promotional tools will influence the purchase decision will depend on the social, cultural and economic environment around which buyers pivot themselves.

## 21 Source: Primary Data

As it could be seen from Table 2, among the different promotional tools that influence the purchase decision in the two-wheeler market in the Malabar region of Kerala, 'word of mouth' is ranked the highest (1) followed by advertisement in magazine ( ??) and the least ranked among them is exchange melas and other promotional tools.

## 22 c) Influence of Social Factors

An attempt has been made to identify the underlying variables among various social factors in the study. The social factors identified are:

## 23 VIII. Results and Discussions

The data collected for responses to the dimensional scales of the study was coded and analyzed using SPSS 23.0 version. The following section presents the results of:

1. The Discriminant Analysis for 'primary reference group' factor influencing the choice of a two-wheeler brand
2. The Discriminant Analysis for 'secondary reference group' factors influencing the choice of a twowheeler brand.
3. The Discriminant Analysis for 'role in the society' factor influencing the choice of a two-wheeler brand.
4. The Discriminant Analysis for 'social status' factor influencing the choice of a two-wheeler brand.

The following presents the Discriminant Analysis for the social factors influencing the choice of a twowheeler brand by the urban and the rural respondents.

The following table gives the standardized canonical discriminate function coefficients for arriving at the Discriminant Function Equation for the urban and the rural respondents. From the structure of the standardized Discriminant Function (DF), the equation for the urban respondents is:  $Y = a_1 + b_1 + c_1 + d_1$

Where Y is the Discriminant Function Equation,  $a_1$  = Primary reference group  $b_1$  = Secondary reference group  $c_1$  = Role in the society  $d_1$  = Social status

The Discriminant function coefficient for Primary reference group = 0.638, Secondary reference group = 0.514, Role in the society = 0.742 and Social status = 0.897. The Discriminant Function equation for the Urban Respondents =  $0.638 + 0.514 + 0.742 + 0.897$  of the four Discriminant function variables, 'social status' had the highest coefficient value of 0.897 as compared to 0.742 for 'role in the society', 0.638 for primary reference group and 0.514 for 'secondary reference group'. Thus, in the case of the urban respondents the most Discriminant Function Variable is the 'Social status'. In respect to the Discriminant Function Analysis for Rural Respondents from the structure of the standardized Discriminant Function (DF), the equation for the rural respondents is:  $Y = a_1 + b_1 + c_1 + d_1$

Where Y is the Discriminant Function Equation,  $a_1$  = Primary reference group  $b_1$  = Secondary reference group  $c_1$  = Role in the society  $d_1$  = Social status

The Discriminant function coefficient for Primary reference group = 0.941, Secondary reference group = 0.863, Role in the society = -0.586 and Social status = -0.459. The Discriminant Function equation for the Rural Respondents =  $0.941 + 0.863 - 0.586 - 0.459$  of the four Discriminant function variables, 'social status' had the

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highest coefficient value of 0.897 as compared to 0.742 for 'role in the society', 0.638 for primary reference group and 0.514 for 'secondary reference group'. Thus, in the case of the urban respondents the most Discriminant Function Variable is the 'Social status'. The Discriminant function coefficient for age= 0.913, education=-0.412 and income=-0.120. The Discriminant Function equation for the Rural Respondents =  $0.941 + 0.863 - 0.586 - 0.459$  of the four Discriminant function variables, 'primary reference group' had the highest coefficient value of 0.941 as compared to 0.863 for 'secondary reference group', -0.586 for 'role in the society' and -0.459 for 'social status'. Thus, in the case of the rural respondents the most Discriminant Function Variable is the 'primary reference group'.

The results of Discriminant Function Analysis showed that there is difference in the Discriminant variable between the urban and the rural respondents. 'Social status' was the major Discriminant variable for the Urban respondents, whereas, the 'primary reference group' was the major Discriminant variable for the rural respondents.

The correlation analysis intends to find out the strength of the linear relationship between two variables. For example, how strong is the relationship between social factors (Independent variable) and two-wheeler purchase decision (dependent variable)? The SPSS results of Pearson's coefficient of correlation 'r' were calculated between the variables and the result showed the following: Social Factors (SF) and Two-wheeler purchase decision (TWP) are significantly correlated with  $r = .732$  ( $p < 0.01$ ). The results also can be interpreted based on Guildford's rule of thumb which states that, social factors and two-wheeler purchase decision 'r' value falls between 0.7 to 0.9 (.732) and therefore, social factors and two-wheeler purchase decision are highly correlated. Therefore, an evidence of a true relationship has been found and the null hypothesis  $H_0$ , which stated that "there is no relationship between social factor and two-wheeler purchase decision" is rejected. Thereby, the research hypothesis has been validated.

? The most Discriminant Variable for influencing consumption behavior varied between the urban and the rural respondents. 'Social status' was the major discriminant variable for the urban respondents, whereas, the 'primary reference group' was the major discriminant variable for the rural respondents in the choice of a two-wheeler brand.

? Majority of the two-wheeler buyers in the Malabar region of Kerala prefer the brand Bajaj. Out of the 300 respondents interviewed in the Malabar region of Kerala in the two-wheeler market, it was found that 108 i.e. 36% of the respondents owned a Bajaj motorcycle followed by Hero Honda and TVS respectively. ? The various promotional tools that influenced the purchase decision in the two-wheeler market in the Malabar region of Kerala are newspaper, television, radio, internet, magazines, word of mouth, test rides and exchange melas. Among them 'word of mouth' was ranked first which influenced the purchase decision the most in the two-wheeler market in the Malabar region of Kerala followed by magazine, television, internet, newspaper, test ride, radio and exchange melas.

## 24 IX. Conclusions and Suggestions

1. The paper presented the Discriminant Analysis for the four dimensions scales of the study. It is significant to highlight that the most Discriminant Variable for influencing consumption behavior varied between the urban and the rural respondents. 'Social status' was the major discriminant variable for the urban respondents, whereas, the 'primary reference group' was the major discriminant variable for the rural respondents in the choice of a two-wheeler brand. 2. Majority of the buyers in the Malabar region of Kerala rely on their own decision to purchase a two-wheeler followed by the decision of their own family members. Other social factors that influenced the purchase decision in the two-wheeler market in the Malabar region of Kerala are friends, relatives and neighbors.

3. Majority of the two-wheeler buyers in the Malabar region of Kerala prefer the brand Bajaj. 'Word of mouth' was ranked first which influenced the purchase decision the most in the two-wheeler market in the Malabar region of Kerala followed by magazine, television, internet, newspaper, test ride, radio and exchange melas.

The two-wheeler manufacturers and dealers may conduct causal marketing like a 'wellness programme' or a 'literacy campaign' for the people of a particular rural or urban area. This will not only improve the sales of the marketer but will also create a brand image of the company and will benefit the society at large. The marketing efforts should be for the cause of the potential customers and the existing customers which should also render free training and health fitness activities for the relatives and friends of the existing customers. <sup>1</sup>

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The results reveal a strong influence of social media in influencing the consumers over multiple buying processes parameters. Influence of social media on vehicular research, suggestions, vehicle technologies, finance calculator and Facebook page marketing have showed a significant share in impacting a consumer before buying an automobile.

6. Fahmeeda Yasmeen (2015) made a study on 'Consumer Behaviour towards Brand Positioning of Two-Wheeler Bikes in Chennai City', to identify the factors influencing consumers in the selection and purchase of a particular brand of two-wheeler. It was also found that the decision to buy a particular brand was mostly influenced by parents and friends. The television also plays an important role in influencing the customers to buy a particular brand of two-wheeler.

7. Priyanka Jain (2015) in her research paper 'A Study of Customer Satisfaction of Two Wheelers on Yamaha' tries to find the customer satisfaction level towards Yamaha two-wheeler vehicles. The findings revealed that friends are the major influencers in buying decision making process.

8. Sirajudeen M. and Leyakath Ali Khan U. (2015) made a study titled 'An Empirical Study on Brand Position among Two-wheeler Motorcycles in Tiruchirapalli District', to identify the brand position among two-wheelers in Tiruchirappalli District and also to analyze the importance of various promotional tools in the purchase of two wheelers. 'Word of mouth' was pointed out to be the major factor that influence the purchase decision for two-wheelers followed by magazines, television, internet, newspaper, test ride, radio and exchange melas.

*[Note: 4. Duggani Yuvaraju and Durga Rao S (2014) conducted a study on 'Customer Satisfaction towards Honda Two Wheelers: A Case Study in Tirupati' to find out the factors that have influence on customers, when they are purchasing Honda bikes. According to their findings TV Ads are a main source of product 9. Trinankur Dey and Dr. L. S. Sharma (2015) in their study 'An Empirical Study of Buying Behavior of the Two Wheeler Consumers in Agartala City' attempted to enquire about the purchasing motives of the two wheeler customers in Agartala city. The analysis has also shown that]*

Figure 1:

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Brand	Number of Respondents	Percentage
Bajaj	108	36.0
Hero Honda	97	32.3
TVS	65	21.7
Yamaha	19	6.3
Others	11	3.7
Total	300	100.0

Figure 2: Table 1 :

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Promotional Tool	Ranking
Newspaper	5
TV	3
Radio	8
Internet	4
Magazine	2
Word of mouth	1
Bike shows & other melas	7
Test ride	6
Exchange melas	9
Others	10

Figure 3: Table 2 :

3

Respondents by their domicile	Function
	1
	0.638
Urban	Primary reference group
	Secondary reference group Role in the society
	Social status
	0.514 0.742
	0.897
	0.941
Rural	Primary reference group
	Secondary reference group Role in the society
	Social status
	0.863 -0.586
	-0.459

Figure 4: Table 3 :





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