# PREFERENCE FOR LIGHT VEHICLES – A STUDY WITH SPECIAL REFERENCE TO UDUMALPET HOUSEHOLDS

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## **ABSTRACT**

Transport system plays a major role in the economic development and life style changes. Performance of household activities has a great say on the preference and dependence on light vehicles, despite increase in road usage, traffic congestion and accidents. Hence, household level study is of great relevance because presently irrespective of the type of family, each household owns more than one type of vehicle and sometimes even more than one vehicle in each type of vehicle. The study attempts to identify the order of preference for light vehicles, most influencing factor leading to the purchase of light vehicles, frequency of usage and its impact on environment. Primary data has been collected adopting structured questionnaire from a sample of 125 respondents.

Analyses of the preference for light vehicles among households revealed that, brand, look/style and comfort influenced purchase of light vehicles. Motor cycle was the most preferred vehicle as the mean score was 4.74 in the 6 point scale. More than half of the households had more than one type of light vehicle. Motorcycle was the only light vehicle preferred to be owned in more than one number. Entire family members took part in the purchase decision for big car. Cash was the major mode of payment. Respondents preferred Hercules brand of Bicycle, TVS brand of Mopeds, TVS brand of Scooters, TVS brand of Motor cycle, Maruti Suzuki brand of small cars and Mahindra brand of big cars. White and black were the most preferred colours. Motor cycle and small car were the most frequently used light vehicle. Bicycle had the lowest cost of maintenance while big car had the highest maintenance cost. The  $R^2$  value indicates that, 42.2% of variance in cost of maintenance is explained by frequency of usage as the regression equation for cost of maintenance is 0.581+0.889 frequency of usage.

Repair was the major problem for light vehicles. Most of the male and female respondents suffered from back pain due to the usage of light vehicles. Respondents highly preferred public transport system as it is cheaper. Purchase decision for light vehicles is significantly based on advertisements. Television was the best mode of advertisement for light vehicles. Majority of the respondents felt air pollution was the main environmental issue created by light vehicles like motorcycle, small car and scooters. Respondents gave higher level of preference for petrol(569). Big car(502) had the major impact on traffic congestion and were the major source of accidents. Frequency of usage, number of member in the family, sex, marital status, occupation, monthly income of family and degree of dependency had a great say on the ownership pattern of light vehicles for household usage.

KEY WORDS: Light vehicles, household preference, attitude towards vehicles, preference for light vehicles

Transport system plays a major role in the economic development and life style changes. Infrastructure development has progressed rapidly along with industrialization and liberalization bringing out radical changes in the modes of transportation by land, water and air. Industrial development led to innovations in vehicles. In modern times, vehicles have changed people's life in

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many ways besides saving the most valuable time and have created place utility in many ways. Vehicles provide access to local and global market by connecting people, countries and culture. Nature and extent of preference towards vehicles changed over societies, economic development, and culture fetching drastic changes in the life style of people world over. Technological advancements led to the design of vehicles improving fuel efficiency, engine output, emission and computerised engine management system. Vehicle body styles have undergone drastic changes. The sedan and sports utility vehicles also dominate today's modern automobile market.

India has Second largest road network across the world with 4.7 million kilometers, transporting more than 60% of goods and 85% of India's total passenger traffic. India is currently the Seventh largest producer of automobiles in the world with an average annual production of 23.36 million vehicles, of which 3.57 million are exported. The Indian automobile market is estimated to become the Third largest in the world by 2016 and will account for more than 5% of global vehicle sales. India is the second largest two wheeler manufacturer and the Fifth largest commercial vehicle manufacturer in the world. In India, sale of automobiles is growing at a rapid rate. Domestic market share in the year 2014-15 was 81% for two wheelers, 13% for passenger vehicles, 3% for commercial vehicles, and another 3% for three wheelers. The automobile industry account for 7.1% of the country's Gross Domestic Product and employs about 19 million people both directly and indirectly.

#### STATEMENT OF THE PROBLEM

The automobile industry in India is rapidly growing with an annual production of over 4.6 million vehicles and vehicle volume is expected to rise rapidly in future. Despite ongoing improvements in the vehicle industry, several aspects are still riddled with problems due to outdated infrastructure and lack of investment in economical parts. The demand for the infrastructure and services has been rising by around 10% a year with the current infrastructure being unable to meet the growing demands. However, with India's relatively low per capita Gross National Product access to transport has not been uniform. Motor vehicle penetration is low compared to international standards with only 10.3 million cars on the nation's roads. In addition, only around 10% of the Indian households own a motorcycle. Despite this, the number of deaths caused by traffic is amongst the highest in the world and is still increasing. Road accidents in Tamilnadu are the highest in India. In 2013, the State recorded the highest 15,563 fatalities in the 14,504 recorded accidents. The increase in number of vehicles from 8.2 million in 2007 to 16 million in 2012 without major improvement in the road infrastructure is believed to be the major reason for most accidents. As per the report published by the State Transport Authority in 2013, out of 66,238 accidents, two-wheelers accounted for 22,496 accidents. Cars, jeeps, taxis and tempos accounted for 18,658 accidents.

Emergence of globalisation and liberalisation brought out a shift in the competition among the segments of automobile industries focusing attention to capture Indian markets. Vehicles have become indispensable in daily routine. There are many vehicle brands available in the market but customer's selection of a particular brand depends on the perception of existing customers during and after purchase. The customer preference and attitude vary from each other depending on factors like after sales service, brand impact, price, performance, mileage and convenience in usage.

The increasing dependency on vehicles despite negative records in terms of accidents along with increase in sales and ownership of multiple vehicles at household level demands a study on the attitude, preference and satisfaction of households towards vehicles. Major share of vehicles on the roads are in the form of light vehicles used by households. Despite increase in road usage, traffic congestion, accident and population household's preference and dependence on light vehicles has a great say on the performance of household activities. Hence, household level study is of great relevance because presently irrespective of the type of family, each household owns more than one type of vehicle and sometimes even more than one vehicle in each type of vehicle. Hence, the present work is carried out to identify the preference towards light vehicles among households with the following *objectives:* 

- To study the preference for light vehicles among households.
- To identify the factors influencing purchase of light vehicles for household purposes.
- To identify the pattern of ownership of light vehicles for household usage.

### SCOPE OF THE STUDY

The study attempts to identify the order of preference for light vehicles, most influencing factor leading to the purchase of light vehicles, frequency of usage and its impact on environment. The work attempts to identify the pattern of ownership of light vehicles in terms of number and type of light vehicles owned. The study analysis the problems faced by the households due to the usage of light vehicles.

## **METHODOLOGY**

Udumalpet households were selected as the universe to find out the customers preference for light vehicles at household level. A sample of 125 respondents was contacted adopting random sampling technique. Primary data was collected adopting structured questionnaire. Pilot study was carried out to test the reliability and validity of the questionnaire. Based on the feedback obtained and observations made during the pilot study, questionnaire was revised and restructured. Good rapport was created among the respondents to ensure success in research endeavour. The head of the family was contacted for collection of information required for the research work. Secondary data relating to the study was from newspapers, magazines, journals and internet. Statistical Package IBM SPSS Statistics 20 version was used to tabulate, analyse and interpret. Statistical computations were made using percentage analyses, five point scaling technique (highest scale was assigned the highest score and lowest scale was assigned the lowest score), rank analysis, chi-square test and regression analyses.

## REVIEW OF LITERATURE

An understanding of the following research works enabled the researcher to identify the research gap in the specific field of study.

Vijayalakshmi D, Shanthakumari M and Deepika S(2015) has identified that, 44% of the respondents owned two wheelers for more than three years. 56% were satisfied with the resale value of the vehicle. 81% viewed that petrol consumption was normal. Customers expected extra facilities like baby carrier, mobile charger, matching helmets and side box for the two wheelers. Suriya R, Vinotha D and Ganga M (2015)'s study of 120 respondents on service quality and customer satisfaction towards Tata Indica at VST Motors, Cuddalore brought out that 58% preferred DLS model, 37% agreed that service stations were fully equipped and also expected reduction in service rate and waiting time. Senthil Velmurugan J (2015) study on customer satisfaction towards Hyundai cars at Krishnagiri District revealed that, 45% belonged to the income group earning above Rs.6,00,000. Customer satisfaction depended on brand image, after sales service, comfort and stylish look. Customers were happy with Hyundai cars. According to Punithavathy Pandian and Arunachala Rayan A (2014) 44% agreed with technical excellence, 46% with quality of the services, 48% with the brand image and 49% agreed with better mileage.

Rajesh M (2014) viewed that, maximum two wheeler customers had a monthly income upto Rs.10,000. Celebrity centric television advertisements with emphasis on features, quality, brand and model had great impact. Archana Singh and Mili Srivatava (2013) study has identified that, majority of customers belonged to professional and employee groups. Pre-sale services were good. Maruti Suzuki met the expectations in offering value for money. Customers assigned highest consideration to mileage followed by the price and performance of car. Adithya HS (2013) study on consumer perception in Bangalore city identified that price played moderate role for 38%. Driving comfort was the most influencing factor for 34%. 39% expressed maintenance cost was moderate. 31% expressed fair influence of resale value. 27% were influenced by latest technology. Ranjithkumar S and Snekalatha T (2013) study on customers brand loyalty and satisfaction of Maruti car at Erode District. 60% were using car for personal use, 34% purchased second hand cars, 56% choose to purchase directly from showroom. Lakshmi N and Layanya D's (2013) work on consumers' preference for motorized two wheeler's among women in Udumalpet revealed that, 67% purchased to add convenience in living. 96% had only one vehicle. 76% purchased directly from dealers. 31% purchased TVS Scooty Pep Plus brand. 40% made purchase decision. 55% purchased during offer period. 40% were motivated by quality factor. 63% considered mileage as an important factor of purchase. TVS Scooty Pep Plus, Mahindra Flyte and Super XL were the most suitable brands of two wheelers for women. Style, capacity and design were of top most priority. Chandramouli S and Arul Krishnan S (2013) work revealed that, 30% agreed with effective after sales communication, 50% were highly satisfied with financial services offered by Indus Motors Private Limited. Majority of the respondents agreed that maintenance cost was less. Sathish M and Balamurugan R N (2013) survey revealed that, expectations of customers on after sale service was high compared to the level of services offered. Shanthinidevi M and Arunpriya S (2013)'s study revealed that, 35% were self-employed, 31% of the customer's monthly income was between Rs.10,000-Rs.20,000. 49% viewed that performance of the car was good. 57% felt Nano cars as safe. Vidyavathi K (2012) results revealed that, respondents were influenced by driving comfort, fuel efficiency and availability of spare parts. Respondents were dissatisfied with technical problems in automobiles. Nikil Monga (2012) study on car market revealed that, price, performance and maintenance cost were the important factor while purchasing. Josephine Stella A and Rajes wari K(2012) study at Virudhunagar revealed that culture, family, reference group, age, lifestyle, personality, selfconcept, motivation, perception, learning, believes and attitudes were the most important determinants of demand. Sathish M and Pughazhendi A (2011) study revealed that, Hero-Honda, Bajaj and TVS were the most favoured brands in the two wheeler segment. Consumers' preference was based on utility, easy handling and convenience. Vijay L and Jayachitra B (2011) identify that companies need to strive for creating satisfaction. In India, the major share in motorcycle segment was occupied by Hero Honda followed by Bajaj and TVS. Sheela Srivastava and Sivakoti Reddy M(2011) study has identified that, all the customers were satisfied with the price, availability of spare parts and after sales service for e-bikes. Arutselvi M (2011) study on TVS Bikes identified that, 60% were having TVS sports bike, 61% were costing Rs.30,000, 70% were youngsters. Santosh Kumar Sharma(2010) study has found out that, Mahindra Bolero has excellent customer satisfaction due to low maintenance cost, after sale service, safety, comfort, design, space and maintenance. Lakshmi N and Parameshwari A (2009) study revealed that, 70% purchased TATA Ace. Commercial vehicle operators were the main source of information. Brand image, mileage and engine capacity affected choice of minitruck. 92% purchased new minitrucks. 32% purchased for a value less than Rs.2,00,000. 72% purchased with an idea of hiring. Respondents owning and operating minitrucks were more satisfied. Thameem Neesa A M (2007) study revealed that, dealers and friends were the main source of information for TATA truck purchases. Interior styling and latest technologies had a great say. 92% purchased for individual ownership. 92% used borrowed funds. 71% earned between Rs.50,001-Rs. 60,000 on an annual basis. All the respondents were satisfied with the post-purchase services provided by the dealer.

# ANALYSIS AND INTERPRETATION

Analyses of the preference for light vehicles revealed the following findings:

# A. Profile of the Respondents

33% of the respondents were in the age group of 31 to 40 years. 88% were male respondents. 89% were married. 30% were under graduates. 45% were employed, 26% were businessmen, 20% were agriculturists, 7% were retired and 2% were

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professionals. 30% represented the monthly income group of Rs.20,001 - Rs.30,000. 76% represented nuclear family. 70% were living in own house.

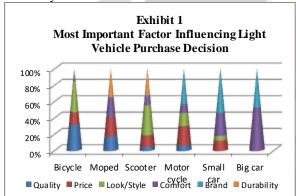
## **B.** Ownership Pattern of Light Vehicles

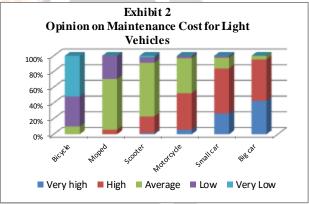
Among the light vehicles owned by households, motor cycle was the most preferred vehicle as the mean score was 4.74 in the 6 point scale followed by small car(4.22), scooter(3.24), moped (2.12), bicycle(0.24) and big car (0.24). Mopeds, big car, scooters and bicycle were not favoured by households. More than half of the households had more than one type of light vehicle. Motorcycle was highly preferred and at the same time was the only light vehicle preferred to be owned in more than one number.

63 motor cycles, 51 small cars and 24 bicycles were purchased between 2001-2010. 99 motorcycle, 53 bicycle, 40 scooters, 40 small cars, 17 big car and 12 mopeds were first hand vehicles. 100 respondents made purchase decision for motor cycle, 69 respondents made purchase decision for small cars, 43 respondents made purchase decision for bicycle, 34 decided for scooter and 12 decided for moped purchases. Entire family members took part in purchase decision for big car.

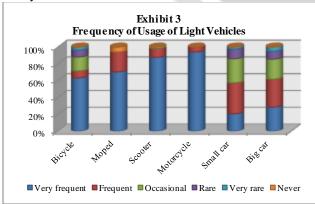
The most important factor influencing light vehicle purchase decision was brand followed by look/style, comfort, quality and durability. Look/style had a great influence on the purchase decision of bicycle and scooters as shown in the Exhibit 1. 79 respondents were using motorcycle for office/job/business purposes. 63 respondents were using small cars for household work. 36 respondents were using bicycle for going to school/college. Cash was the major mode of payment for 90 motor cycles, 60 bicycles, 49 scooters and 27 small cars. 24 respondents preferred Hercules brand of Bicycle. All the 17 respondents preferred TVS brand of Mopeds. 30 preferred TVS brand of Scooters. 44 preferred TVS brand of Motor cycle.

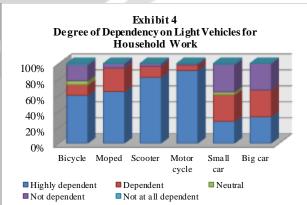
39 respondents preferred Maruti Suzuki brand of small cars and 12 respondents preferred Mahindra brand of big cars. White and black were the most preferred colours. Majority of the light vehicles owned like bicycle, scooter and motorcycle had two users. Small car and big car had three and more users. Number of users per light vehicle increased with increase in investment on light vehicles. Bicycle had the lowest cost of maintenance while big car had the highest maintenance cost among the light vehicles used by households as shown in the Exhibit 2.





Motor cycle, small car were the most frequently used light vehicle while moped and big car were the least frequently used light vehicles by households as shown in the Exhibit 3. 157 respondents faced repair problem relating to light vehicles. 72 respondents faced mileage problem. Irrespective of sex, vehicle users suffered from back pain. Households highly depended on motorcycles as shown in Exhibit 4.





Motorcycles were the major cause of air pollution. Bicycle did not create environmental pollution. Majority of the respondents felt air pollution was the main environmental issue created by light vehicles like motorcycle, small car and scooters. Respondents gave higher level of preference towards petrol(569). Television was the best mode of advertisement for light vehicles. 40% highly preferred public transport system. Big car(502) had the major impact on traffic congestion and were the major source of accidents.

## C. Households Preference and Ownership Pattern of Light Vehicles

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Hypothesis testing of the impact of profile of households on preference and ownership pattern on light vehicle owned using appropriate statistical tools revealed the following findings:

- > There is a significance impact of number of household members using light vehicles and ownership pattern of light vehicles owned.
- There is a significant impact of total vehicles owned by households and extent of impact on environmental pollution.
- > There is a significant impact of degree of dependency on light vehicles and total vehicles owned by households.
- > There is no significant relationship between preference for public transport system and total vehicles owned by households.
- ➤ Profile in terms of age and type of family had a significant impact on the total vehicles owned by households. Educational qualification had a significant impact on frequency of usage of light vehicles. Type of family had a significant association with the degree of dependency as shown in the table 1.

TABLE 1: Impact of Profile of Respondents and Ownership Pattern of Light Vehicles

Profile	Total Vehicles Owned by	Frequency of Usage of Light	Degree of Dependency on
	<b>Hous eholds</b>	Vehicles	<b>Light Vehicles Owned</b>
Age	0.018*	0.120	0.312
Sex	0.665	0.800	0.855
Marital Status	0.066	0.619	0.641
Educational Qualification	0.085	0.014*	0.081
Occupation	0.796	0.085	0.303
Monthly Income	0.616	0.104	0.482
Type of Family	0.000*	0.247	0.007*
Ownership Pattern of House	0.327	0.975	0.302

<sup>\*</sup>Significant (2-sided) at 5% level of significance.

The R value of 0.649 indicates a high degree of correlation. The  $R^2$  value indicates the extent of total variation in the dependent variable (Cost of maintenance) on the independent variable (Frequency of usage) i.e., 42.2% of variance in cost of maintenance is explained by frequency of usage as the regression equation for cost of maintenance is 0.581+0.889 frequency of usage.

## CONCLUSION

Analyses of the preference for light vehicles among households revealed that, brand, look/style and comfort were the most influential factors for purchase of light vehicles. Small car and motorcycle were the most preferred light vehicles for household usage. TVS was the most preferred brand of light vehicles. Repair was the major problem for light vehicles. Most of the male and female respondents suffered from back pain due to usage of light vehicles. Respondents highly preferred public transport system for its low cost. Preference for light vehicles is significantly based on television advertisements. Degree of dependency, frequency of usage, number of member in the family, sex, marital status, occupation, monthly income of family had a great say on the ownership pattern of light vehicles for household usage.

#### SUGGESTIONS

Based on the research work carried out, the following suggestions would enable improvement in the usage pattern of vehicles: Households has to ensure proper pollution control system for the light vehicles owned. Adoption of signals and traffic rules will reduce traffic congestion and road accidents. Sharing of vehicles during peak hours could reduce traffic congestion. Vehicles must be regularly serviced to reduce pollution and accidents.

#### SCOPE FOR FURTHER STUDY

Future researchers could carry out on topics relating to customer attitude towards heavy vehicles; attitude and satisfaction towards hired vehicles; customers preference towards Sports Utility Vehicles; performance evaluation towards goods vehicles; a comparative study of preference for owned vehicle and public transport system; a comparative study of preference for government owned and private owned public transport system.

## LIMITATIONS OF THE STUDY

The present study is a micro level study and so the findings are applicable only to Udumalpet households. Due to time constraint, the size of the sample has been restricted to 125 households. The findings of the study are based on the information provided by the households through the structured questionnaire only. The results of the study were based on the opinion of households drawn from Udumalpet town. Hence, the conclusions may not be applicable to other taluks or other districts or for future period as the preference for light vehicles undergo changes in the dynamic environment.

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