

**IMPACT OF MARKETING CHANNEL AND PROMOTION
STRATEGIES ON ADOPTION OF SYNTHETIC
LUBRICANTS BY TWO-WHEELER MOTOR VEHICLE
USERS: A STUDY IN SELECT CITIES OF
MAHARASHTRA (INDIA)**

A Thesis

Submitted for the Award of the

**Degree of
Doctor of Philosophy
in Management**

By

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DECLARATION

I hereby declare that this submission of research is my own work and that, to the best of my knowledge and belief, it contains no materials previously published by any other person, except where due acknowledgment has been made in the text. I further declare that no part of this Thesis has been submitted or accepted previously for the award of any other Degree or Diploma of this or any other University or Institute.

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15 December 2015

THESIS COMPLETION CERTIFICATE

This is to certify that the thesis entitled **Impact of Marketing Channel and Promotion Strategies on Adoption of Synthetic Lubricants by Two-Wheeler Motor Vehicle Users: A Study in Select Cities of Maharashtra (India)** submitted by Debanjan Saha to ICFAI University, Jharkhand for the award of the Degree of Doctor of Philosophy (Ph. D.) in Management is a bona fide record of the research work carried out by him under our Joint Supervision and Guidance. It is certified that the work has not been submitted anywhere else for the award of any other diploma or degree of this or any other University.

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EXECUTIVE SUMMARY

Innovation has enabled mankind in its continued quest for new and improved solutions. However, development of innovative products in modern times is often intensively planned, long drawn and capital intensive. In spite of these meticulous efforts, the success rate of new products in the market is poor.

This research has been motivated by the professional marketing practice of the researcher in launch of new categories of lubricants and it focuses on the impact of marketing channel and promotion strategies of lubricants marketing companies, on adoption and usage of synthetic lubricants for two-wheeler motor vehicles powered by four stroke petrol engines. Lubricant companies distribute lubricants for two-wheelers through retail, reseller and workshop channels with aggressive advertisement and sales promotional campaigns. Yet, adoption and usage of synthetic lubricants has met with limited success. Marketing of new products therefore remains a serious challenge and poses the prime research problem.

An extensive literature survey has been carried out on relevant research in the domains of marketing mix, channel strategies, promotion strategies, consumer behaviour, new product adoption, synthetic lubricants and lubricants marketing published in reputed international and Indian journals to identify research gaps, which are absence of studies on awareness, adoption and usage of the newly launched low involvement product category of synthetic lubricants for two-wheelers in India, the most effective media to create

awareness of a new product, effect of sales promotion events, post purchase satisfaction, diffusion of information, sensitivity to high prices, value for money and personal economic factors on new product adoption.

Research Objectives drawn from research problem statements are as follows: to study the marketing channel and promotion strategies adopted by lubricants marketing companies and their impact, to assess awareness of two-wheeler users and mechanics regarding synthetic lubricants for two-wheelers, to study their buying behaviour, to study the role of the marketplace influencers and to study the factors influencing recommendations of two-wheeler mechanics.

In order to achieve these objectives, a set of 48 null hypotheses have been formulated, out of which, 42 null hypotheses pertain to two-wheeler users are summarized as: no difference in two-wheeler users who use synthetic lubricants compared to those who use conventional mineral oil based lubricants for their two-wheelers, with regard to awareness; availability; benefits of synthetic lubricants; involvement levels; interest levels; price sensitivity; perception of value for money; vehicle characteristics; demographic factors; consumer behaviour characteristics like Customer Innovativeness, Opinion Leadership, Market Mavenism and Two-Wheeler Enthusiasm; effect of different modes of advertisement and promotions; effect of marketplace influencers like Innovative Customers, Opinion Leaders, Market Mavens, social, online media including blogs and product category influencers like Motor Vehicle Mechanics and Salespersons of Lubricants shops: satisfaction levels; and brand loyalty. A further set of 6 null hypotheses

pertain to mechanics, which are summarized as: no difference in two-wheeler mechanics who recommend usage of synthetic lubricants compared to those who recommend usage of conventional lubricants for two-wheelers, with regard to perception of influence over users: awareness; knowledge; and behavioural characteristics like Commercial Motive and Opinion Leadership.

Research Methodology adopted for this research follows a descriptive research design. The target population for the study was three sets of population:

- The first set was users of 4 stroke petrol engine two-wheeler motor vehicles, who are in a position to exercise their choice on the type and brand of lubricant to purchase and use in their vehicle.
- The second set was owners and mechanics of independent workshops.
- The third set was owners and managers of vehicle manufacturers' authorized service stations.

The sampling design comprised of:

- Two steps of sampling for the first set of target population, pilot survey on a sample size of 225 in Pune followed by final survey on a sample size of 400 in Pune, Nashik, Aurangabad and Solapur.
- Single step sampling on a sample size of 55 in Pune and Kolhapur for the second set of target population.
- Single step sampling on a sample size of 15 in Pune and Nashik for the third set of target population.

The research instrument used to collect primary data was a well-structured questionnaire for the pilot survey of the first set of population, which was slightly modified for the final survey, while that for the second set of population was also a separate questionnaire, whereas for the third set it was a structured interview on the basis of a prepared list of questions.

The primary data collected from respondents was edited, coded and analyzed using IBM SPSS 22.0 software. A mere 17% of two-wheelers, overwhelmed by motorcycles were found to be using synthetic lubricants. Out of the total 48 hypotheses, 38 hypotheses were tested using ANOVA test while the remaining 10 hypotheses, involving vehicle characteristics and demographic factors, were tested using Chi square test. Null hypothesis was accepted in case of 23 hypotheses while it was rejected and alternative hypothesis was accepted in case of the remaining 25 hypotheses, considering significance level of 0.05.

Exploratory Factor Analysis was performed on 19 scale items to reduce them to a grouping of few latent variables which explains the observed variables by extracting factors influencing mechanics in their recommendatory behaviour. Principal Component Analysis was used to transform the variables into uncorrelated composite variables or principal components. Orthogonal rotation was selected to yield factors in the final solution which have no correlation amongst them. The criteria used for final factor extraction were that the Eigen values, which are the sum of variances of factor values, should be greater than one and that the factor structure should be meaningful, useful and conceptually sound. Accordingly five factors were extracted, which have been labeled and

defined as: Personal Financial Benefits, Mass Visibility Benefits, Personal Esteem Benefits, Mass Awareness Benefits and Mass Engagement Benefits.

The research findings are as follows:

- There is significant difference in awareness of synthetic lubricants between users of synthetic lubricants and conventional lubricants.
- Adopters of synthetic lubricants are highly involved in the purchase process. This finding is contrary to the widely accepted categorization of lubricants as a low involvement product category.
- Users of synthetic lubricants exhibited significantly higher levels of interest in acquiring greater knowledge on the lubricants.
- Significant difference exists in sensitivity to prices and value for money between users and non-users of synthetic lubricants.
- Significant differences were also exhibited in adoption and usage of synthetic lubricants based on the characteristics of the vehicles owned by the individual respondents, like the category of the vehicle, age and the cubic capacity of the engine of their vehicle. However, owners displayed no difference in adoption levels of synthetic lubricants based on the make of their two-wheeler.
- Demographic characteristics like age, formal education, gender, marital status and family monthly take home income showed no difference in usage of synthetic lubricants while only occupation revealed significant difference.

- Adopters and users of synthetic lubricants were found to exhibit significantly higher levels of consumer behaviour traits like: Customer Innovativeness – Being among the first in their social circle to buy new technology products and willing to take calculated risks in doing so; Opinion Leadership – The ability to convince others on a specific domain and that others value their domain specific advice; Market Mavenism – Being the storehouse of marketplace information on new brands, types of products, their availability across markets and outlets; and Two-wheeler Enthusiasm – The extent of emotional attachment with their two-wheeler and enjoying long rides.
- Users of synthetic lubricants have not been swayed by advertisements through various media and it had no significant effect on users of synthetic lubricants compared to non-users.
- Sales campaigns at petrol pumps and free gifts were the only two out of the total of five means of below the line sales promotions campaigns done by lubricant marketers, which had a significant effect on usage of synthetic lubricants. The other means like sales campaigns at lubricants shops, discounts and lucky draws did not have any significant effect.
- There is significant difference in effect of marketplace influencers like opinion leaders, social and online media, mechanics and salespersons of lubricant shops, whereas it is not so in the case of influencers like innovative customers and market mavens.

- Users of synthetic lubricants were found to exhibit significantly higher level of satisfaction and brand loyalty, compared to users of conventional mineral oil based lubricants.
- Mechanics, irrespective of their recommendatory preference for synthetic lubricants, had similar perception on the influence exerted by them; awareness and knowledge levels regarding the features and benefits of lubricants. They however exhibited significant difference in their commercial behavioural characteristics like commercial motive and opinion leadership. Commercial consideration has been found to be a strong differentiating factor between the two classes of mechanics. Those avoiding synthetic lubricants fear loss of business due to reduced customer visits resulting from prolonged oil drain intervals, reduced wear of engine parts and lower incidences of downtime for maintenance. They also fear loss of customers, in case customers do not perceive any distinct advantage in using a higher priced product. Those recommending synthetic lubricants however put technical performance as the top most recommendatory criteria.

The research concludes that the industry failed to attract the attention of the target audience on the new product category of synthetic lubricants. However, below the line sales promotion campaigns conducted by marketers have been great attention pullers, interest generators and usage instigators. The users of synthetic lubricants are highly knowledgeable and involved in the product category. Marketplace influencers like opinion leaders, mechanics and

lubricant shop sales persons exert significant influence in purchase decisions of consumers on usage of synthetic lubricants. They play a key role in rapid diffusion and proliferation of adoption and continued usage of the new product category. They have in turn been impacted by the various direct marketing communications, personal selling and promotional campaigns unleashed by lubricants marketers.

Recommendations of this research are as follows: Lubricants marketers are recommended to thoroughly overhaul their marketing communication for promoting synthetic lubricants by differentiating synthetic lubricants from conventional lubricants, imparting greater emotional appeal in advertisements, incorporating concepts of greater value for money derived from their usage, modifying their promotion mix heavily in favour of below the line sales promotional campaigns to better engage with two-wheeler users and rapidly create a conducive environment where domain knowledge is actively sought and accessible to the target segment. They should segment mechanics based on their psychographic profile and thereafter deliver customized promotions appealing to needs of each of these segments.

A major contribution of this research is that it unearths existence of niche segments of innovators and early adopters of the product category of synthetic lubricants who have exhibited high levels of awareness, interest and involvement, contrary to the extant categorization of lubricants as a low involvement product category. It quantifies the extent of influence by marketplace influencers and various modes of promotions to identify the most

effective means, within each category. It extracts the factors influencing the recommendatory behaviour of mechanics, based on the influence of promotional strategies of lubricants marketers.

The research is limited to only one consumable product in low involvement category, namely synthetic lubricants for four stroke two-wheeler petrol engines; only one vehicle category, namely two-wheelers and only a few selected cities in one state of India. It is also limited to adoption and usage of the new product category compared to the conventional product category and does not analyze brand preference within the category.

There exists scope for future research in the domain of impact of marketing strategies of marketers on adoption and usage of other new innovative products in low involvement category, covering wider markets. Longitudinal studies can be undertaken to study the impact of increased awareness, involvement, exposure to social media and brand affinity.

Keywords: new product adoption, low involvement category, synthetic lubricants, influence, consumer behaviour.

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CHAPTER 1: INTRODUCTION

CHAPTER 1: INTRODUCTION

Human beings have always been creative, improving and innovating from the dawn of civilization, to solve their problems and improve their way of life. According to several psychologists, the human brain is designed for seeking patterns and solving problems. Modern means of transportation hastened the progress of civilization and increased learning and scientific endeavor. Rapid strides made by the petroleum industry, in petroleum exploration, production and refining to produce premium petroleum fuels and lubricants has been the prime support that has fostered the development of modern transportation.

Innovation has enabled mankind in its continued quest for new and improved solutions to problems in various fields of pure and applied science, technology and social sciences including management studies. On the basis of outcome and their impact on growth, innovations have been categorized by Christensen and Bever (2014) as performance improving innovations – which replace old products with improved products; efficiency innovations innovations – which help provide products and services to customers in a faster, cheaper, more convenient and satisfying manner and market creating innovations – which radically transform complicated, sophisticated and expensive products and services to become accessible to and affordable for consumption by a new class of customers or create a new market altogether, where the demand did not exist earlier.

Highly successful organisations have gained stature, respect, trust and loyalty of society by regularly introducing innovative products and solutions. However, the success rate of new products in the market is poor with an estimated 41 percent of all new products resulting in failures (Barczak et. al. 2009). According to Nielson's India Breakthrough Innovation Report for 2012, out of 16914 fast moving consumer goods launched in 2012, only 23 qualified as breakthrough innovations on the basis of revenue generation, sustained consumer demand and value proposition.

Firms who have marketed their innovative solutions better than their rivals have often won in the market even with somewhat inferior products compared to their rivals. Marketing of Innovations is a therefore prime tool for maintaining sustainable competitive advantage for organisations. In the current hyper competitive, volatile, uncertain, complex and ambiguous environment, it is all the more imperative for marketers to rise above and continually stay ahead of competition by exploring, educating, engaging potential customers and by endeavouring to enrich customer experience with conveniently accessible and innovative value added solutions.

Consumers actively share their experience with others through word of mouth and in recent times, increasingly through online and social media. This enhances diffusion of innovation in the target segment and is a great opportunity for marketers in proliferating awareness amongst prospective consumers and invoking a desire in them for trial usage.

1.1 RESEARCH MOTIVATION

This research has been motivated by the professional marketing practice of the researcher, in launch of new categories of lubricants, aimed at different target customer segments for varied applications, creation of consumer awareness and initiation of innovative approaches to handhold the consumer to nudge them to initiate trials, enhance their experience, establish efficacy and superiority of the new innovative solution compared to usage of legacy solutions and nurture eagerness within them to offer themselves for brand advocacy, willingly spread action oriented word of mouth publicity, instill trust and faith in the new solution amongst consumers to ensure a wholehearted switch and stickiness amongst a large consumer base.

The general attributes of individual consumers with respect to this low involvement product category, lead them to rely heavily on influential persons in the marketplace. In the background of prevalence of these behavioural conditions amongst a large proportion of vehicle users, the impact of marketing strategies undertaken by lubricants marketers on adoption and usage of the new innovative product category synthetic lubricant forms a highly interesting topic of study.

The research is of great socio-economic importance as it intends to:

- Have a better understanding of consumer behaviour with respect to adoption and usage of a new innovative and cost effective product,

- Understand effectiveness of various capital intensive marketing initiatives undertaken by marketers to promote new products and
- Understand the various marketplace influence dynamics at play, which either distort or reinforce marketing communications of marketers to effectively influence consumers favourably or unfavourably in their informed choice of new product adoption and usage.

After these few opening remarks, this chapter proceeds with some background information on motor vehicle industry focused on the two-wheelers and lubricant industry focused on lubricants for two-wheelers. An overview of marketing strategies is discussed thereafter. Channel and promotion strategies adopted by lubricant marketing companies are discussed next followed by the final section of this chapter namely, research problem statement.

The research flows through Literature Review in chapter 2 which culminates in identifying research gaps and then moves on to developing Objectives and sets of Hypotheses in chapter 3. This is followed by chapter 4 which provides details on Research Methodology adopted in this research study. Data Analysis is presented next in chapter 5 which leads us to Findings, Conclusions and Future Research in chapter 6. Appendices are presented at the end, wherein listing of all publications referred to, is provided in the Bibliography, Questionnaires used in this research, Specifications of lubricants, Summary of research flow with detailed results and relevant research publications by this researcher are provided.

1.2 MOTOR VEHICLES

The motor vehicle or automobile industry developed in the early twentieth century in Europe and USA. The Indian automobile industry has witnessed rapid growth in production capacity alongwith modernization since the mid-nineties. India is now a significant player in the world market, with manufacturing bases and export hubs of many multinational vehicle manufacturing companies. The Indian automobile production, domestic sales and export volumes and growth in India is given in Tables 1.1.

Table 1.1 Automobile Industry in India

Volume in number of units in Lakhs

Vehicle Category	Production 2014-2015		Domestic Sales 2014-2015		Exports 2014-2015	
	Volume	Growth	Volume	Growth	Volume	Growth
Passenger Vehicles	32.20	4.28%	26.01	3.9%	6.22	4.42%
Commercial Vehicles	6.97	-0.28%	6.15	-2.83%	0.86	11.33%
Three Wheelers	9.49	14.33%	5.32	10.80%	4.08	15.44%
Two-Wheelers	185.00	9.58%	160.04	8.09%	24.58	17.93%
Grand Total	233.66	8.68%	197.52	7.22%	35.74	14.89%

Source: Society of Indian Automotive Manufacturers (2015)

The above table highlights the importance of the two-wheeler category, as it shows the highest volumes of production, sales and exports.

1.2.1 TWO-WHEELER MOTOR VEHICLES

Motor vehicle is a vehicle, self-propelled by an engine, which is normally used for transportation of people and goods on road. Based on the size and end-use, motor vehicles are categorized by the Motor Vehicles Department of the state of Maharashtra as two-wheelers, and 18 other categories which include autorickshaws, cars, jeeps, trucks, buses and others.

Two-wheelers include motorcycles, scooters and mopeds. Motorcycle is a two wheeled vehicle mounted with a petroleum fueled internal combustion engine for self-propulsion. They were first commercially developed in 1894 by Heinrich Hildebrand, Wilhelm Hildeberg and Alois Wolfmüller in Germany. They are of two types, one for riding on road and the other for riding off-road. Within both these types, there are several sub-types based the engine power and on the end-use of either regular commuting on road or for sports, both on and off road. Motorcycles are used in India and other developing countries overwhelmingly as a utility vehicle for personal mobility, whereas in developed countries, they are used primarily as a recreational vehicle.

A scooter is a two-wheeler motor vehicle having a step through frame with a platform at the base of the step through area for the driver's feet. The engine and drive systems are housed beneath the seat and attached to the rear axle.

Moped is a compact low powered, slow speed, economical two-wheeler vehicle, often gearless, with a step-through design.

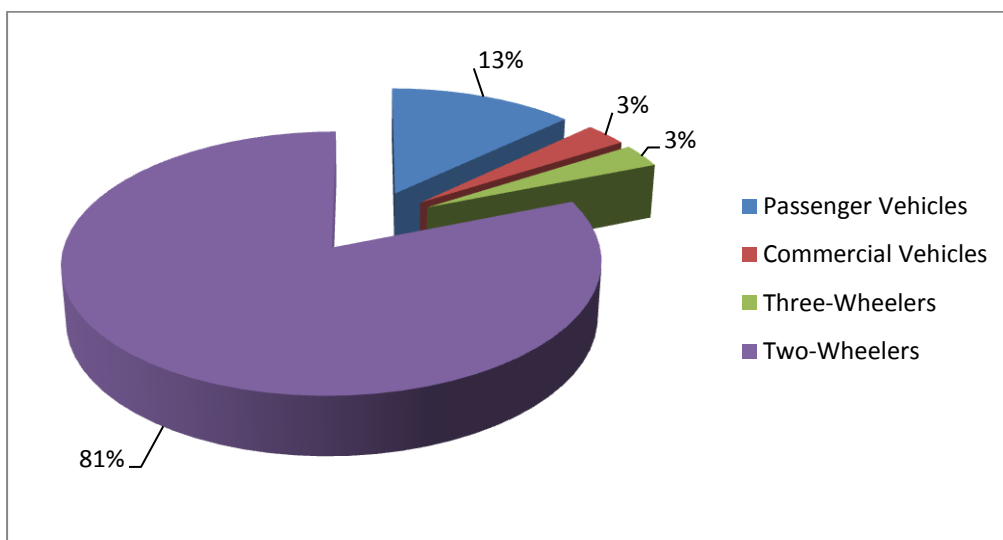
Two-wheelers are powered by petrol engines of two types, 2-stroke and 4-stroke. A two-stroke, or two-cycle, engine is a type of internal combustion engine in which the power stroke is achieved in only one revolution of the crankshaft, with two strokes, or up and down movements, of the piston in comparison to a four-stroke engine, which uses four strokes. This is done by combining the combustion stroke and the compression stroke into one stroke and combining the intake and exhaust strokes into another common stroke. Production of two-wheelers used for general commuting purpose has gradually shifted from those powered by 2-stroke engines to 4-stroke engines, due to better fuel efficiency and ability to meet emission norms while two-wheelers with two-stroke petrol engines have been phased out. An overwhelming majority of two-wheeler motor vehicles currently on road in India are those powered by 4-stroke petrol engines.

Engine oils for four-stroke engines, popularly called 4T oils form a distinct category of oils. These are different from those used in engines of petrol driven cars, as in the case of motorcycles the same lubricant is used to lubricate the clutch as well as the gear in addition to lubricating the crankcase. Motorcycles require high friction type engine oil, while scooters require low friction engine oils as the oil lubricates only the engine. Friction modifiers are therefore used to in scooter engine oils, which results in improvement of fuel economy. Out of the total lubricants required for two-wheelers, engine oils constitute around 95% while front fork oils, rear suspension oils and greases constitute the remaining 5%.

1.2.2 TWO-WHEELER MARKET IN INDIA

Two-wheelers are the single largest category of motor vehicles in India commanding an overwhelming market share of 81% in the year 2014-2015, whereas that of other categories are passenger vehicles at 13%, commercial vehicles at 3% and three-wheelers at 3%, as given in Figure 1.1 below.

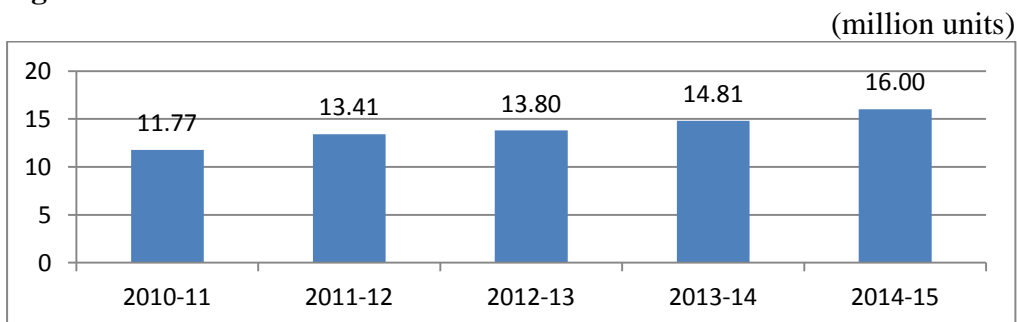
Figure 1.1 Vehicle Market Share in India in 2014-2015



Source: Society of Indian Automotive Manufacturers (2015)

The sales trend of two-wheelers in India is given in Figure 1.2 below.

Figure 1.2 Sales Trend of Two-wheelers in India



Source: Society of Indian Automotive Manufacturers (2015)

The above sales result in net annual additions of 8 to 9 million units, considering gradual scrapping of old unserviceable vehicles. Based on these data, the two-wheeler population in India, is estimated at 87.7 million units in 2015, and is expected to reach 236.4 million units in 2035. Such rapid growth will make India the largest market for two-wheelers in the world within the next 15 to 20 years.

The large market has attracted most major global two-wheeler brands to India, which alongwith home grown brands have transformed the country into a major manufacturing hub. The leading brands marketing two-wheelers in India are Hero MotoCorp, Bajaj Auto, TVS Motors, Enfield, Honda, Yamaha, Kawasaki, Suzuki, Piaggio, KTM and Harley-Davidson. The most popular range of engine cubic capacity (cc) is between 100cc to 250cc. Whereas an overwhelming majority of two-wheelers are designed for commuting, a few sports and cruiser models have also been introduced, which are very few in number. This large vehicle population has created a huge demand for lubricants, specially meeting the unique needs of two-wheeler engines.

This research study will concentrate on users of such two-wheeler vehicles, in the categories of motor cycles, scooters and moped, used for general on-road commuting purpose, which are powered by 4-stroke petrol engines and whose engines are lubricated by 4T oils. The target vehicle category therefore comprises of vehicles of a wide range of engine capacity, power and performance standards.

1.3 LUBRICANTS

The process of reduction of friction between moving surfaces is lubrication and any substance that does so, is a lubricant. Vegetable oils and animal fats found usage as lubricants in early ages. Water is also a natural lubricant in certain limited applications. For modern automotive application, lubricants are liquid, viscous petroleum based substances used in machines, primarily to reduce friction between moving or sliding parts, cool engines, clean engines, reduce wear and tear, protect against rust and corrosion, seal lubricated surfaces, maintain peak performance and prolong useful life of the machine.

Lubricants are categorized according to their major component as follows:

- Mineral oil based lubricants: Lubricants manufactured from mineral lubricants base oils, which are the heavy end products of refining natural crude petroleum. These are the most widely used conventional lubricants.
- Synthetic lubricants: Synthetic lubricants are high performance lubricants, which are either artificially made from chemical compounds such as polyalphaolefins (PAO), esters, and polyalkylene glycols (PAG) or manufactured by chemical modification of petroleum components.
- Semi-synthetic Lubricants: Semi synthetic lubricants are blends of the above two categories with at least 30% of synthetic, first developed in 1966. They often meet the superior performance levels of synthetic lubricants and are therefore included within the broad category of synthetic lubricants.

1.3.1 LUBRICANT BASE OILS

Lubricants are made from lubricant base oils, which have been categorized by American Petroleum Institute (API), as follows:

Figure 1.3 Lubricant Base Oil Groups

API BASE OIL CATEGORIES				
Base Oil Category	Sulfur (%)		Saturates (%)	Viscosity Index
Group I (solvent refined)	>0.03	and/or	<90	80 to 120
Group II (hydrotreated)	<0.03	and	>90	80 to 120
Group III (hydrocracked)	<0.03	and	>90	>120
Group IV	PAO Synthetic Lubricants			
Group V	All other base oils not included in Groups I, II, III or IV			

Source:<http://www.machinerylubrication.com/Read/29113/base-oil-groups>, accessed on 21.01.2015.

Sulphur is an impurity in oil, presence of which is controlled. Saturates are resistant to oxidation at high temperatures, hence a higher percentage of saturates is preferred in lubricants. Viscosity Index (VI) is the measure of stability of viscosity with change in temperature, viscosity being a measure of its resistance to gradual deformation by shear stress or tensile stress and corresponds to the concept of thickness and to the concept of resistance to flow. A higher measure of VI indicates lesser change in viscosity with a given change in temperature or in other words lesser thinning of oil at high temperatures and hence a high value of VI is preferred in lubricants.

1.3.2 SYNTHETIC LUBRICANTS

Synthetic lubricant is made from Group IV and Group V synthetic base stocks and also by chemical modification of Group III mineral lubricant base oils and blending it with performance enhancing chemical additives. They are greatly superior to mineral oil based lubricants, by being free of impurities and having a molecular structure that facilitates flow and reduces frictional loss. Their technical advantages include better low and high temperature viscosity performance, better chemical & shear stability, decreased evaporative loss, resistance to oxidation, decreased thermal breakdown, decreased oil sludge problems, extended drain intervals, environmental benefit of less oil waste, improved fuel economy, longer engine life, superior protection against deposit formation in engine, reduced chances of damaging oil passageway, clogging and increased horsepower and torque due to less initial drag on engine.

Synthetic lubricants are produced out of expensive components and high technology production processes. Hence they are generally much more expensive than conventional mineral oil based lubricants. Semi-synthetic lubricants are designed to have most of the benefits of synthetic lubricants and are produced at a much lower cost than fully synthetic lubricants. The term synthetic lubricant, used in lubricants industry parlance, commonly refers to and includes both fully synthetic lubricants and semi-synthetic lubricants. This study will also follow the same standard understanding while referring to the term synthetic lubricants. Mineral oil-based lubricants are the most widely used type of lubricant and they are much cheaper than the above two.

1.3.3 LUBRICANTS MARKET

According to the report of 'Research and Markets' titled "Global Lubricants (Mineral Oil Lubricants, Synthetic Lubricants, Bio-based Lubricants, and Greases) Market - Trends & Forecasts to 2019" the global lubricants market volume in 2013 was 38 million MT and is estimated to grow at a CAGR of 2.1% only by volume during 2014 to 2019. The reasons for slow growth are use of high performance oils, saturation in automobiles in developed markets and lower emission norms for industries and automobiles.

According to Grand View Research Inc., the global market for synthetic lubricants was 0.68 million MT in 2013, which is expected to grow at a CAGR of 2.9% between 2014 and 2020 to reach a volume of 0.82 million MT by 2020. Synthetic lubricants are therefore expected to grow at a much faster pace than conventional mineral oil based lubricants. This hugely positive outlook for synthetic lubricants is fueled by:

- Expectation of strong growth in automobile industry in large developing economies like China, India and Brazil,
- Vehicle manufacturers, known as Original Equipment Manufacturers or OEMs in lubricants industry parlance are upgrading their recommendation from conventional mineral based lubricants to synthetic lubricants and endorsing the efficacy of synthetic lubricants and
- Promotional campaigns by lubricants marketers are increasing awareness of benefits of synthetic lubricants in terms of engine performance.

Indian lubricants market is the fifth largest in the world after USA, China, Russia and Japan. The Indian lubricant market size is estimated at 2 million MT per annum in volume and over Rs. 240 billion in value. It is one of the fastest growing lubricant markets in the world with an annual growth rate of 3 to 5%. Given the stagnating or negative growth rates in developed countries, growth rate in India is comparatively high due to increasing usage of automotive transportation, high growth rate of rural demand, increasing industrial production and capital expenditure on infrastructure development.

The lubricant industry in India was decontrolled in 1993 which led to entry of global giants of the industry to rush to India to seize a share in the large growing market. There are now a large number of lubricant marketing companies operating in the Indian market. However, inspite of the onslaught of global players, the industry continues to be dominated by the three major public sector undertakings with their brands namely Indian Oil Corporation Limited, with its brand – Servo Lubricants, Hindustan Petroleum Corporation Limited, with its brand – HP Lubricants and Bharat Petroleum Corporation Limited, with its brand – MAK Lubricants, who have together cornered over half of the market volume. Major portion of the remaining share of the organized lubricants industry is captured by multinationals like BP Castrol, Exxon-Mobil, Total-Fina-Elf, Tide Water Oil, Shell, Gulf, Valvoline and many other minor players. The above mentioned three public sector undertakings and BP Castrol together command a market share of over 80% in India. Whereas Indian Oil dominates the lubricants industry with a market

share estimated at 40%, Castrol dominates the automotive lubricant market with an estimated market share of 19%. Automotive lubricants constitutes an estimated 55% of the total lubricants market in India, which is again bifurcated into sales from fuel stations of public sector oil majors, which are commonly called petrol pumps and bazaar segment comprising of other shops and workshops selling lubricants. Private sector lubricants marketers dominate the bazaar segment with an estimated 75% market share.

Synthetic lubricants brands for two-wheelers were commercially launched in India gradually over the last 10 years and they continue to remain in the introduction stage of product life cycle. Independently verifiable figures of consumption volumes of synthetic lubricants are not available in India. However it is estimated that synthetic lubricants have cornered around 5% of the automotive lubricant market by volume, which translates to around 10% of the automotive lubricant market by value in India. Synthetic lubricants have been growing by over 5% annually in India, fueled by introduction of latest generation high performance vehicles in the Indian market.

All these major lubricants marketers have also introduced synthetic lubricants in the Indian market. Some of the major brands of synthetic lubricants for two-wheelers being marketed in India are:

Synthetic Lubricants – Castrol Power1 Racing 4T 10W-40, Mobil1 Racing 4T 10W-40, Shell Advance Ultra 10W-40, Elf Moto 4 TECH 10W-50, Motul 300v 15W-50, Motul 7100 4T 20W-50, Valvoline SynPower 4T 10W-30 and

Semi-synthetic Lubricants – Castrol Activ 4T 10w30, Servo 4T Synth, MAK 4T NXT, Shell AX7 10w40, Mobil Extra 4T 10W-40, Veedol super swift 10w40, Valvoline 4T Premium 20w50, Gulf Pride 4T Plus 10w-30, Total Quartz 7000 10w40, Motul 5100 15w50, Petronas Syntium Moto 4 Sx SM 15w50, TVS TRU4 Premium 10w30.

Lubricants for two-wheelers are expected to conform to various industry-wide accepted specifications. The most common amongst them are those declared by the American Petroleum Institute (API) and Japanese Automotive Standards Organization (JASO).

API defines specifications for 4T oils in terms of performance requirements. These are denoted as: API SH, API SJ, API SL, API SM and API SN in the order of increasing superiority.

JASO, the most reputed body prescribing specifications for wet clutch application in 4 stroke two-wheeler engines, defines specifications comprising of performance specifications, physical and chemical properties and frictional characteristics, under JASO T903 standards. Their MA specification oil is for high friction application in motorcycles while MB specification oil is for low friction application in scooters.

The above mentioned specifications are given in Appendix – V.

1.4 MARKETING STRATEGIES

Marketing Strategies according to Kotler (1993), “comprises the broad principles by which marketing management expects to achieve its business and marketing objectives in a target market. It consists of basic decisions on marketing expenditures, marketing mix and marketing allocation”. Business and marketing objectives fall within the realm of strategic management, whereas the target market is a domain shared by both these domains. Formulation of marketing strategies takes off after strategic management objectives of the firm are decided and goes about deciding the ways and means to achieve these objectives within the set timelines.

Target market is arrived at after an in-depth understanding of the total available market and segmenting it based on the types of needs and ways by which the needs are met or problems are solved, coupled with matching capabilities of the firm to service needs of these market segments.

Marketing mix refers to the set of marketing tools that a firm chooses at varying extents in order to achieve its marketing objectives. The most popular four factor tool of marketing mix is called the 4Ps of marketing: product, price, place and promotion. The 4Ps model of marketing mix has been the mainstay of marketing management studies for long. In the recent past an interesting action oriented variation of the concept has been formulated by Ettenson et. al. (2013), called the SAVE model, which stands for solution, access, value and education.

An important component of marketing strategy is the concept of positioning which incorporates all elements of marketing mix. Kotler (1993) defines positioning as “the act of designing the company’s offer so that it occupies a distinct and valued place in the target customer’s minds”.

The concept of positioning is further aided by the concept of brand. The latter is more physical and visible in its presence, leading to generation of perceptions in the customer’s mind, where the brand takes a relative position. Additionally brand is supported by all components of the marketing mix to create the positioning of a brand in the customer’s mind.

Brand, according to Kotler (1993) includes “a name, term, sign, symbol, or design, or a combination of them, intended to identify the goods or services of one seller or a group of sellers and to differentiate them from those of competitors”.

Brand enables marketers to offer a bundle of consistent features to customers, who in turn perceive having received consumer utilities of significant value. It therefore helps marketers to attract and retain customers. It enables marketers to retain their intellectual property rights. A successful brand generates loyalty amongst its customers, who are willing to pay a premium over competition. This goodwill for the brand results in creation of an intangible asset for the firm and a valuation is ascribed to a brand, based on the premium revenue it generates.

1.4.1 PRODUCT STRATEGIES

A product refers to a tangible or intangible offering to satisfy a need. A product and a service are viewed as being the tangible and intangible objects respectively, which are often clubbed together to be broadly referred to as product. They may be distinct in their offer or they may be a combined offer, wherein both are components of varying degrees in the final offering. Whereas a product is created to satisfy a need of the customer, marketers should avoid the fallacy of what Levitt (1960) calls marketing myopia by concentrating on the product and not the customer's need.

Product strategies encompass designing, introducing, modifying and ultimately withdrawing products from marketing, in consonance with customers' needs and positioning strategy of the marketer. Product features which can be tweaked according to need are design, conformance to specifications, variety, size and packaging. In case of durables, they may also include warranty, erection and commissioning service, maintenance service, return and disposal service.

Managing a product over lifecycle phases of introduction, growth, maturity and decline is an integral area in product strategy. A product may have to undergo variations in positioning, features, pricing and promotion at various stages of its lifecycle in order to continue to be preferred by customers.

1.4.2 PRICING STRATEGIES

Pricing of a product is a crucial marketing decision, which needs to recognize the brand valuation, positioning, target customer perception, competitor prices and the target margins desired.

The perception of high prices positively correlates with premium quality and is also a differentiator in customer perceptions associated around novelty, prestige, status symbolism and exhibitionism.

The main factors for pricing are:

- pricing objectives, like market penetration, market skimming, revenue maximization, profit maximization, sales volume maximization,
- demand, depending on price elasticity,
- costs, depending on extent of leveraging capital structure, contribution, scale of production, learning curve,
- competitors' prices, depending on relative positioning and
- pricing method, like markup, target return, perceived value, market rate, sealed-bids, psychological pricing and so on.

Intermittent pricing strategies to promote products make use of additional premium pricing during launch of prestigious goods whereas cash discounts, quantity discounts, seasonal discounts, and trade discounts are used to garner additional sales volumes, market share, gross revenue and clear built up inventories.

1.4.3 CHANNEL STRATEGIES

The third P in the marketing mix is Place or distribution, also called distribution channels or just channels. Marketing channels enable marketers to reach their end-customers with their offerings through intermediaries called channel partners. Channel partners may be merchant intermediaries at multiple levels like wholesalers, stockists, distributors, dealers and retailers, who buy, hold inventory and resell or they may be agent intermediaries like brokers, agents and representatives who secure sales on behalf of the parent firm.

Channel decisions are critical as they create long term commitments for firms. The channel structure affects all the other factors of marketing mix, based on the aspired positioning strategy of firms. Producers use marketing intermediaries to overcome constraints of financial resources in setting up an extensive retailer network to reach out to end customers. Marketing intermediaries impart greater efficiency in enabling producers to reach out to customers by their geographic dispersal, specialization, experience, contacts and scale of operations, in moving goods through time, space and possession gaps. Additionally they contribute to flow of information, promotion, negotiation, ordering, financing, risk taking, physical possession and title.

Marketing channels are characterized by several levels and various categories. Zero level channels indicate direct sale by firms to end customers, using its own sales force or marketing and sales agents. These are also referred to as direct channel. Industrial sales normally follow the direct channel route.

One level channel is characterized by presence of dealers between producers and customers. Automobile dealers and fuel stations or petrol pumps are this single layer intermediary between automobile companies and petroleum marketing companies and their end-customers. These dealers generally deal exclusively with a marketing firm.

Multi-level channel is prevalent in consumer goods and consumer durables industries with intermediaries like wholesalers, stockists, distributors and retailers. More often than not, higher level intermediaries, also called channel partners, have exclusive tie-up arrangement with marketers for a product range and enjoy exclusive territorial jurisdiction for distribution.

OEM channel is another type of channel between a producer and its customers, through a layer of another producer, called original equipment manufacturer. This channel is used by producers of components who reach their customers through assemblers or aggregators.

Newer channels like online channel for sales by order booking through website or mobile phone application followed by order fulfillment by direct delivery to the customer, are taking shape and their volumes are progressing at a rapid pace, threatening brick and mortar stores. Telemarketing is another channel of order generation from customers over telephone, followed by order fulfillment in the manner similar to online channel.

1.4.4 PROMOTION STRATEGIES

Promotion involves appropriate communication to the target market in a convincing manner so as to arouse an interest in them to be positively disposed towards the brand offering. According to Quelch (1983) promotion enables marketers “to attract price-sensitive, less brand-loyal consumers”.

Identifying the target audience and enabling most economical and effective communication to fulfill communication objectives are important strategic areas in promotions. Appropriate designing of the message format, content and structure to be convincing are of great importance. Communication with the target audience is achieved through four tools of promotion mix or communication mix, namely advertisement, sales promotion, public relations and personal selling. Advertisement is called above the line promotion, while sales promotion is called below the line promotion.

Advertisement encompasses paid mass communication in a non-personal and non-obtrusive manner, directed towards the target audience in general through print media like newspapers, magazines, pamphlets, brochures; outdoor media like hoardings, signboards, gateways, gantries, banners, posters, wall paintings; electronic media like television and radio; entertainment media like cinema, concerts, circus, sports arena and online media like websites and social media mobile applications. It provides opportunities to capture attention, liking, recall and preference for a brand, product or firm by dramatizing benefits.

Sales promotion refers to using short term incentives to educate, demonstrate and entice sales. It makes use of trade shows, fairs, samples, trials, gifts, lucky draws and discounts. These short term campaigns achieve greater focus and intensity, than advertisement, in engaging the target audience. Sales promotion forms an important vehicle for on ground promotion of products at various lifecycle stages. They can boost awareness and trials for new introductions as well as renew interest in mature and declining stages of products. Sales generated as a result of such campaigns can be better identified and inferred.

Public relations are programmes like press conferences, seminars, sponsorships, social and charitable activities, publications, annual reports, positive unpaid mentions in media and lobbying. These tools are used to subtly generate positive disposition of the target audience, often with significantly more objectivity and credibility.

Personal selling involves engaging with the target audience in person, through sales presentations, meetings, demonstrations or over telephone. Personal selling is characterized by the greatest engagement levels, providing opportunities for better clarification of all aspects of the offering and the highest proportion of successful culmination into making a sale. It facilitates development of personal rapport and evokes sense of obligation, which increases chances of making a sale.

1.5 CHANNEL STRATEGIES OF LUBRICANTS MARKETERS

Lubricants marketers in India pursue a variety of channel strategies to reach end-customers with their goods and services. Lubricant marketing is achieved almost solely through physical channels. Lubricants have been made available at every nook and corner of India including the most remote areas, wherever there is presence of vehicles and machines. Virtual or electronic channels through electronic commerce are yet to make inroads.

Physical flows of the product originate in the channel from lubricant oil blending plants where lubricants are manufactured. Thereafter, it flows to customers through various levels of storage locations of the firm or its channel partners like lubricant warehouses, clearing and forwarding agents, wholesalers, stockists, distributors and dealers.

The industry caters to diverse categories of customers like individual vehicle owners, commercial vehicle fleet operators, agricultural equipment owners, owners of boats, trawlers, ships; large, medium, small and micro industries and government institutions like railways and armed forces having different purchase behaviour and needs. Different channels are therefore made use of, by lubricants marketers, to serve different categories of customers in the most effective manner. The industry does not have any differentiated channel strategy for marketing synthetic lubricants and all channels have access to these. The various channels are discussed in detail in the subsequent sections.

1.5.1 DIRECT CHANNEL

Direct channel is the zero level channel, where lubricant companies sell directly to customers, without the product passing through any merchant intermediary. Customers targeted by this channel are large and medium industries, shipping companies, airlines, large commercial fleet operators and government institutions like railways and armed forces.

These customers need large quantities of lubricants, involving high volume transportation in truckloads, within short delivery periods. The mode of purchase is often competitive bidding through sealed tenders. As high volumes are at stake, lubricant companies offer heavy discounts to win tenders. This leaves wafer thin margins at the hands of lubricants companies. These customers also dictate extended credit periods of 30 days or more. These customers also require very specialized technical services to advise them on optimum lubrication solutions for their complex and expensive equipment. It also requires regular interaction with senior level officials in the customers' organisations. The above requirements are beyond the capabilities of merchant intermediaries. Hence lubricants markets have chosen to reach these customers themselves directly.

Agent intermediaries like sales agents are often used to service this channel by way of collection of orders, coordinating deliveries as per schedule, collection of payments and general liaison to ensure smooth functioning of business relations.

1.5.2 AUTHORISED SERVICE STATION CHANNEL

A wide presence of authorised service network has been identified by vehicle manufacturers as a prime means to instill confidence in their brand. Accordingly they encourage their dealers to open multiple authorised service stations closer to their customers and even in small towns.

The maintenance services carried out at these service stations are as per the vehicle manufacturing company's standards and only genuine, approved and recommended spare parts are stipulated to be used. Hence almost 100% of the initial few free servicing offers of vehicle manufacturers are availed by customers at these service stations. Thereafter, for carrying out periodic paid servicing, the visits of customers decrease. However, for carrying out major engine and gear box maintenance, customers prefer authorised service stations, over independent workshops. It is due to these reasons that the volume of lubricants consumed at authorised service stations is large.

Vehicle manufacturing companies have techno-commercial tie-ups with lubricants marketing companies for production and sale of genuine, co-branded like HP Bajaj DTS-I 10000, approved or recommended grades of lubricants like Hero 4T Plus, Honda Genuine Engine Oil and TVS TRU4 Premium. Often tie-ups exist with multiple brands of lubricants. Only such approved lubricants grades are sold through this channel of authorised service stations. They are often supplied by the company directly or at times through their distributors.

1.5.3 RETAIL CHANNEL

The three public sector oil marketing companies namely, Indian Oil Corporation, Bharat Petroleum and Hindustan Petroleum dominate marketing of automotive fuels in India through a network of an estimated 51,000 fuel stations which are called retail outlets in the oil industry, but commonly referred to as petrol pumps. These companies market their own brand of lubricants through these retail outlets. This channel is called retail channel. Supplies to the channel are made either directly by companies or through a first level intermediary, who stocks and resells to these outlets. This was earlier the only channel for retail sales of lubricants, till the industry was decontrolled and private players were allowed access to the market in 1991.

A few private sector oil companies namely, Reliance, Essar and Shell have also opened a few fuel stations, through which they sell lubricants. Shell sells its own brand of lubricants, Reliance sells its own brand as well as Castrol, while Essar sells Servo brand lubricants.

This is a major channel owing to its wide network, convenience in accessibility and familiarity due to regular visits of customers for fueling their vehicles. Although sale through this channel has witnessed some decline, the slide has since been halted by launching a slew of marketing initiatives, which are discussed in a later section on promotions.

1.5.4 RESELLER CHANNEL

This channel comprises of stockists, distributors, automobile spare-parts shops, multi brand lubricants shops and exclusive brand lubricants shops. After decontrol of the economy, this channel has mushroomed with the entry of a plethora of private sector lubricants marketers of varied sizes. It is estimated that there are over 30 major lubricants players in the Indian automotive lubricants market. As the traditional fuel station channel was not available to these companies, they have developed their distribution network in this channel and have reached closer to customers.

The mainstay of this channel is the distributor. Exclusive territorial jurisdiction is normally allocated to distributors. Alternate arrangements based on exclusive product range or end customer segmentation is also sometimes resorted to. Distinction on product range is made to enable multiple distributors to operate in a territory by segmentation on industrial lubricants grades, agricultural pump-set grades and original equipment manufacturers grades. The segmentation of end customers is also either in line with product range segmentation or additionally, commercial vehicle fleet operators, small industries, vehicle manufacturing company's dealers and so on.

The distributors take title, hold inventory, arrange onward logistics and sell lubricants to shops. The distributors are replenished from the company's lubricant blending plant or lubricant depot or a clearing and forwarding agent. They have their own sales force and delivery vehicles to facilitate sales.

They supply to a wide variety of retailers, who may sell lubricants exclusively or alongwith other automobile spare parts. An overwhelming majority of them stock and sell products of multiple brands, whereas a miniscule of them sell a particular brand exclusively. The retailers are catered by multiple distributors of multiple brands. The market is therefore hypercompetitive for distributors to capture orders from retailers. Distributors therefore undertake various promotional interventions alongwith their principal company to boost sales, which is discussed in a later section on promotion.

There are various categories of shops selling lubricants. A niche variety is exclusive brand lubricant shops, which stock, promote and sell only one particular brand of lubricants. Marketers carry out exemplary branding at such outlets to highlight their premium stature. Marketers sometimes pay site rentals to promote them. The next category is shops selling only lubricants, but of multiple brands. These enjoy better customer attraction in view of their high assortment stocking capability. A further category is shops selling lubricants alongwith other automotive spare-parts, which are frequented by customers who seek products of both categories, required for maintenance and repair of vehicles. These shops are patronized by mechanics, who purchase lubricants as well as spare-parts for vehicle repairs at their independent workshops. The distributors feel challenged in this channel, as the owners of these shops treat lubricants indifferently as they earn much more margins by selling automotive spare-parts.

1.5.5 WORKSHOP CHANNEL

Lubricants are normally purchased and filled in vehicle engine sumps at the time of maintenance service at workshops. Some large sized independent workshops buy, stock and sell lubricants themselves, alongwith carrying out maintenance work. They do so as they are in a position to influence their customers to purchase lubricants from them.

This channel is the most unorganized channel in India, as they often operate from makeshift premises, in conditions of poor ambience and without proper documentation. They are often set up and owned by trained and experienced mechanics, caught by the bug of entrepreneurship. They provide fast, inexpensive and adequate quality of personalized service in presence of the vehicle owner. They are therefore often preferred over authorised service stations. Aided by their low capital cost structure and wide customer patronage, they have grown in numbers at a scorching pace. This channel is characterized by high volume of lubricating oil change business.

The growth of this channel has also attracted the organized corporate entities, which have set up chains of their own brand of workshops for multi-brand vehicles. They are professionally managed and by virtue of their high concentrated volumes of lubricants usage, they are able to procure lubricants from lubricants marketers at bargain prices.

This channel commands tremendous influence over customers and is both a major challenge as well as opportunity for lubricants marketers.

1.6 PROMOTION STRATEGIES OF LUBRICANTS MARKETERS

A study of the lubricant industry under the Porter's Five Forces model for competition reveals a very high level of inter-firm rivalry, coupled with high bargaining power of customers, high bargaining power of suppliers and quite low barriers to entry, with the only respite coming from negligible threat of substitution. The inter-firm rivalry is characterized by the presence of a handful of major players and a large number of fringe players.

The major players are continually finding their market share being snipped at and chipped away by fringe players who flood the price sensitive Indian market with cheaper and lower performance level lubricants. Major players are therefore bogged down to protect their flanks against these attacks while simultaneously strategizing for launch of premium products with skimming pricing for targeting niche segments.

Under the above conditions of hyper-competition, lubricants marketers have unleashed a slew of market promotion mix tools to aid brand preference with the intention of capturing long term customer value. However, as lubricants constitute a low involvement category product, much of the promotional investments are likely to get lost in clutter. The industry does not have any differentiated or exclusive promotion strategy for synthetic lubricants. Advertisements and sales promotions focused on customer segments rather than product category segments.

The primary strategies used are discussed in the following sections.

1.6.1 ABOVE THE LINE PROMOTION STRATEGIES

Most major lubricant companies have used the electronic, print, in-store and outdoor media to promote their brand.

They have adopted the strategy of campaigns on television and radio over multiple time periods of few weeks at a stretch followed up again with a few weeks and in multiple time slots through the day over short durations of 10 to 15 seconds each. The preferred channels of television are satellite broadcast news, entertainment and sports channels, while the preferred channel on radio is the frequency modulation (FM) channel. These channels are chosen in view of their popularity covering various categories of audience.

The television picturisation and theme covered topics ranging from animated depiction of functionality based benefits derived, endorsement by mechanics, who are influencers in purchase of lubricants to abstract depiction of feelings based on benefits derived from usage. FM content ranged from straight jacket information proclamation to depiction of comic problematic situations resolved by the brand.

Amongst print media, daily newspapers has witness few paid advertisements. There have been declarations of financial performance and notices invited for distributorship and dealership, which have been used to incorporate promotional messages in a subtle manner. Sports pages also contained sponsored sections, where the brand got prominence.

The preferred print media was general news magazines, sports magazines and trade magazines and journals. They carried attractive artwork of the lubricant packages, vehicles and the endorsing celebrities. Indian Oil, Bharat Petroleum, Castrol and Gulf Lubricants have used celebrity endorsement by Indian test cricketers and Hindi movie actors to create a rub off effect of the celebrity's endorsement to add credibility, enhance brand connect and aid brand recall.

In-store displays at point of purchase are crucial in their ability to cause a spur of the moment switch to a competitor brand from amongst an assortment of brands, given an attractive setup. Lubricants marketers have used attractive counter top stands to display lubricants packs at eye level of customers, branded display racks to highlight their brand, shelf glorifiers to make their packs stand out prominently and have chosen the best visibility shelf to drive their merchandising interventions. Merchandising and display competition covering both attractiveness and quantity of display are periodically conducted by lubricants marketers around the peak season, post monsoons. This is often coupled with illumination competition. In-store posters depicting their brand ambassadors are strategically displayed, as are informative leaflets conveniently placed in leaflets display stands on sales counter tops. The lubricant stores are branded with signboards sporting the company's brand. These strategies have been largely successful in nudging customers to prefer their brand over competition, as the category is characterized by low involvement, low thinking and very low feeling in deciding on a brand.

Outdoor media is by far the most used advertisement tool by lubricants marketers. The public sector companies have petrol pumps as their captive channel, where hoardings, billboards, banners, posters and standees are prominently displayed with lubricants advertisement in the forecourt area. Manual painting of walls, pillars, posts and shutters with lubricant advertisement had been the most proliferated media till a few years back, in view of the relative low costs and ability to meaningfully cover target areas in the vicinity of automobile workshops. This has now given way to flex printed outdoor advertisements, as these are much more elegant and are now available at a much reduced prices nearly comparable with the cost of manual wall paintings.

Flex and vinyl banners and signages has changed the face of outdoor advertising. The benefits of mass printing with consistency in quality compared to hand painted advertisements, has given fillip to this new industry, which in turn has helped lubricants marketers to promote their brand better.

Although glow signboards are put up at stores by lubricants marketers, elaborate neon signage, with flashy changing displays have not yet been used, as lubricants are primarily sold during daytime and sales are negligible after late evenings, since workshops normally do not remain open much longer past sunset.

1.6.2 BELOW THE LINE PROMOTION STRATEGIES

Extensive sales promotion campaigns are carried out by lubricants marketers in the market place, trade fairs, outlets, workshops and customer premises to boost their brand equity and achieve quick spurts in sales, with the expectation of residual brand recall and stickiness to achieve repeat sales.

Lubricant companies have been prominent at major trade fairs, auto exhibitions, industrial expositions and rural agricultural fairs to showcase their products, disseminate information and generate interest for their brand. They have also organized road shows on similar lines at prominent marketplaces.

They conduct seminars for industrial customers to educate production and technical personnel of industries on technical properties of various grades of industrial lubricants, the functions performed by them, choice of the right grade of lubricant for operation of different machinery, methods of proper usage and storage and the benefits derived from proper usage, in terms of extended equipment life, reduced wear, lower downtime, improved production efficiency and over reduction in total cost of plant ownership.

Seminars are also conducted to educate their channel partners like distributors, dealers, independent multi-brand retailers and independent mechanics with the objective that they will develop better interpersonal relationship with channel members, improve affinity for the brand and result in their willingness to promote the brand.

These have contributed significantly to increasing awareness on lubricants amongst motorists by giving them an opportunity to focus their attention on an area generally ignored by them earlier, generate interest in the product category, comprehend its importance and develop brand connect by having a closer look at the lubricant packages and going through the package labels and information leaflets.

Oil change campaigns are one of the most prominent promotional strategies employed by lubricants marketers. These campaigns entail free labour charges in performing oil change services. Earlier oil change used to be carried out by draining out the used and degraded oil by gravity. In recent times, oil change machines have been developed to vacuum clean the interior of the oil sump of all traces of degraded oil clinging to the walls of the oil sump, thereby preventing the fresh oil from getting contaminated with traces of the remnant degraded oil. However, usage of these machines is yet to take off in authorised as well as independent workshops. Oil change campaigns for carrying out oil change service using these machines, without any extra charge towards the service rendered has been attracting customers, as they perceive greater value, compared to traditional oil change method. Fuel stations which have been losing out to lubricant shops have become successful in bringing lubricant sales back to their forecourt, by such campaigns. These campaigns have also been extended at residential complexes and market places.

Free gifts, giveaways through scratch cards, lucky draw prizes, price offs and free extra quantities are some of the most prevalent customer promotional schemes introduced by lubricants marketers.

They have also resorted to extended channel and trade incentive programmes. The most commonly used amongst them are turnover incentive on achieving quarterly and annual volumes, trade discounts on lifting target quantities of particular stock keeping units, loyalty schemes, incentives on sales growth volumes and incentives on promoting premium grades.

Companies have engaged in workshop activation programmes including mechanic training and certification, workshop upgradation, professionalization and adoption, coupled with workshop branding. Mechanic loyalty schemes in various hues, operationalization mechanisms have been introduced. These include cash, silver or gold coins in pouches inserted inside lubricant pails of 10, 15 and 20 ltrs sizes, mechanic scratch coupons on label of packs, mentioning points, convertible to cash or passbooks for regularly crediting loyalty points on purchase incidences, to be redeemed for high value gifts on reaching requisite redemption slabs. Group tours, parties, night outs, invitation to entertainment shows and sports events for mechanics have also been practiced by companies to enhance brand association.

Marketers have regularly engaged in the above and they continue to innovate in their promotional and incentive programmes to entice channel partners.

1.7 CONSUMER BUYING BEHAVIOUR

The study of consumer behaviour relates to understanding the decision making process of consumers, encompassing the impact of external factors like marketing mix interventions of marketers and environmental influence as well the impact of their own internal factors, resulting in purchase of a product of a brand, in certain quantity, at a time and from a sales outlet of their choice.

Marketing mix factors effectively arouse the latent need in consumers for a product and effectively motivate them to exhibit the marketer induced purchase behaviours.

Environmental factors include cultural factors and social factors. The culture, sub-culture or social class to which the consumer belongs or aspires to belong, collectively displays attitudes and behaviours in consonance with accepted profligacy, parsimony, conservatism and individualism norms, which impacts purchase decision making process of its members. Social factors like family, individual's role, status, membership of normative social groups play a significant role in shaping a consumer's decision.

Internal factors including personal factors and psychological factors play the final pivotal role, in purchase decisions of consumers. The consumer's maturity in terms of age, life cycle stage, occupation, disposable income and lifestyle pursued by the consumer sway their decisions. Psychological factors like attitudes, beliefs, awareness, perception, understanding, motivation coupled with the diverse states of feelings like depression, delight,

achievement, fulfillment and morality guide the consumer in arriving at purchase decisions.

The purchase decision itself involves the passage through stages of problem or need recognition, information search, evaluation of alternatives and decision, followed by post purchase behaviour. The decision process may be intense or casual depending on the perception of consumers on the extent of differentiation between brands and the extent of their involvement in the purchase process. Complex buying behavior is exhibited in case of deciding between brands with significant differences in case of high involvement category products, whereas the process becomes more relaxed, exploratory and adventurous to culminate into a variety seeking buying behaviour in case of low involvement category products. Likewise in case of deciding between brands with little difference between them for a high involvement category product, dissonance reducing behaviour is exhibited, which degenerates into a habitual buying behaviour for a low involvement category product.

However, in case of purchase of innovative products, according to the Innovation Adoption model of Rogers (2003), consumers progress through the cognitive stage of awareness, to the affective stage of interest and evaluation to the final behavioral stage of trial and adoption.

1.8 RESEARCH PROBLEM STATEMENT

- 1.8.1 Organisations continually upgrade and launch new products and services to differentiate from and stay ahead of offerings of competitors by undertaking elaborate processes for such launch. However, many new product launches have been grossly unsuccessful.
- 1.8.2 Advancement of automotive engine technology has necessitated higher performance synthetic as well as semi-synthetic lubricants. However, adoption and usage of synthetic lubricants for two-wheelers has met with muted response in India.
- 1.8.3 Lubricants marketing companies have positioned their products in a vast array of outlet types and used various modes of promotions, which have yielded limited results. Given the low involvement product category, effective promotional mix remains a challenge.
- 1.8.4 Lubricants users are subject to influence of mechanics and their role in promoting synthetic lubricants needs better understanding.

CHAPTER 2: LITERATURE REVIEW

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Literature Review of relevant earlier academic, scholarly and research work is an essential component of any academic project, as a good literature review creates a strong foundation, based on which knowledge in the domain can be further built and expanded. It identifies areas where further research is needed and opens up opportunities to extend, ratify, generalize or contest earlier research findings and conclusions.

An exhaustive literature review has been carried out covering the domain which is provided in the following sections, leading to the section on Research Gaps identified. Care has been taken to ensure that the review is not restricted by narrow geographic boundary to any country or region. Stress has been given to more recent publications in reputed international journals, as they in turn have reviewed previous work and have built on past work. The review was however restricted to publications in English language only.

The literature review carried out is concept centric or domain centric. Out of the vast number of papers reviewed only those papers propounding concepts relevant to the study has been included in the subsequent sections.

The literature review attempts to report and inform all the relevant advances in accumulated knowledge in the domain. However, papers of higher relevance or which appeared to present breakthrough concepts have been discussed at somewhat greater length.

2.1 LITERATURE REVIEW ON MARKETING MIX

The basics in study of marketing management, for decades, revolved around the concept of the 4Ps of marketing mix – product, place, price and promotion. **Ettenson et. al. (2013)** made a revolutionary contribution by providing a SAVE model of marketing to retool the 4Ps of marketing mix, which shifts the emphasis from products to solutions, place to access, price to value and promotion to education as detailed below:

Figure 2.1 SAVE Model

Instead of PRODUCT	Focus on SOLUTION Define offerings by the needs they meet, not by their features, functions, or technological superiority.
Instead of PLACE	Focus on ACCESS Develop an integrated cross-channel presence that considers customers’ entire purchase journey instead of emphasizing individual purchase locations and channels.
Instead of PRICE	Focus on VALUE Articulate the benefits relative to price, rather than stressing how price relates to production costs, profit margins, or competitors’ prices.
Instead of PROMOTION	Focus on EDUCATION Provide information relevant to customers’ specific needs at each point in the purchase cycle, rather than relying on advertising, PR, and personal selling that covers the entire marketing communication spectrum.

The concept is well suited for marketing of new and innovative products.

2.2 LITERATURE REVIEW ON CHANNEL STRATEGIES

Marketing channels enable marketers to physically reach their products and services to their widely dispersed end customers and marketers rely on channel intermediaries to purchase in bulk, carry inventories and sell their goods preferentially over those of their competitors.

Marketing channel strategy decisions are of great importance as they represent constraints and opportunities, inherently over a long term, according to **Dwyer and Welsh (1985)**. Marketing channel strategies refer to the choice of structure in designing the distribution channel by manufacturers. They also include influence strategies which refer to content, frequency and intensity of communications intended to achieve demonstration of favourable behaviours by their channel partners.

The study of channel structure, as a component of channel strategy, has received considerable attention. **Mallen (1973)** presented channel structures and characteristics on the basis of a mix of different sets of functions performed by various levels of channel intermediaries. As research on channel structure progressed, several varying elements were studied across different channels. **Rosenbloom (1987)** studied channel levels or number of intermediaries between the manufacturer and the end customer, intensity at various levels or the number of intermediaries at each channel level and the types of intermediaries at each level like wholesalers, distributors and retailers.

Recent research on channel structure is focused on the operationalization of channel structure as transactional form or bureaucratic form.

Transactional form research by **Williamson (1979, 1981)** presented governance structures and arrived at transaction costs analysis based decisions on performance of functions internally or externally. Costs and benefits studies on using vertically integrated channels have shown that external or market transactions are superior to internal or relational transactions in cases of low environmental uncertainty, low levels of transaction-specific asset requirement, high prevalence of bargaining conditions and when performance assessment was objective (**Reukert et. al. 1985; Dwyer and Oh 1988; Heide and John 1988; Noordewier, et. al. 1990**).

Research on bureaucratic form of channel structure studied structural dimensions like centralization, formalization, and specialization or differentiation in channel performance (**Reukert et. al. 1985; Dwyer and Oh 1988; Stern and Reve 1980**). This approach looked at aspects of power, authority, and control of the channel to achieve the desired performance. This approach stressed that the effectiveness, efficiency, and adaptiveness of the channel could be improved by increasing centralization, formalization, and specialization. Centralization refers to the extent to which decisions taken unilaterally or on shared basis with channel partners. Formalization involves the extent to which activities and social relationships are governed by laid down rules, procedures, agreements and contracts. Specialization or

differentiation refers to the extent that tasks are segregated (Reukert et. al. 1985).

As channel intermediaries increasingly turn non-exclusive, at more than one level to carry multiple brands, it is becoming challenging for marketers to keep their channel partners motivated and loyal to favour their brand over competition. A well-crafted communication strategy plays an important role in improving channel functioning and contributes significantly as the first step in the journey to superlative channel management. **Mohr and Nevin (1990)** proposed that communication strategy moderates the impact of channel conditions (structure, climate, and power) on channel outcomes (coordination, satisfaction, commitment, and performance). It concludes that when communication strategy matches channel conditions, it enhances channel performance. Collaborative communication strategy enhances results when channel conditions are marked by relational structures, supportive climate and symmetrical power, whereas autonomous communication strategy yield better results where channel conditions like discrete structures, unsupportive climate or asymmetric power prevails. The gaps in their study are empirical testing of propositions developed, effect of competition or regulation, channel complexity in terms of number of levels and number of intermediaries in each level. Longitudinal analysis of communication strategies on evolution of channel structure and behaviour is also a gap identified in the study.

Marketing investments by marketers towards advertisements and promotions creates accumulation of goodwill for channel members, which in turn spurs

sales growth. This forms an incentive for further investment by channel members. **Chintagunta and Jain (1992)** developed a dynamic model for determining equilibrium marketing investment levels for channel members and a framework for understanding the effects of channel dynamics on difference in profits resulting from coordinated marketing interventions. They have concluded that when the manufacturer and channel member followed a coordinated strategy, it resulted in enhanced marketing effort levels by channel members resulting in higher total channel profits and that there is greater need for such coordinated strategy when discounts, rates, carryover effects of marketing efforts and goodwill interactions between manufacturers and channel partners are high.

Boyle et. al. (1992) developed measures of the following six influence strategies in marketing channels - 1. Promise: Source certifies to extend specified reward contingent on the target's compliance, 2. Threat: Source informs the target that failure to comply will result in negative sanctions. 3. Legalistic plea: Source contends that target compliance is required by formal agreement. 4. Request: Source asks target to act; no mention of subsequent sanctions. 5. Information exchange: Source supplies information with no specific action requested or otherwise indicated. 6. Recommendation: Source stresses that specific target action is needed for the latter to achieve desired outcomes. They examined association of the influence strategies on channel relationship and alternative channel governance structures (market, administered, franchise, and corporate). The results confirmed the predicted

negative association between relationalism and the following influence strategies: threats, promises, legalistic pleas and requests.

Bandyopadhyay and Robicheaux (1998) extended the study of the impact of six influence strategies of suppliers on their dealers in USA and in India – information exchange, recommendation, request, promise, threat and legal pleas and found that in India, recommendation and legal pleas, which demand compliance of the terms of agreement between them, had positive impact on dealer satisfaction. The researchers acknowledge that with increasing competition, recruiting and retaining channel intermediaries is challenging and conclude that by using proper influence strategies marketers will be able to attain the desired channel performance levels while keeping channel partners satisfied. The study lacks generalizability as it has been tested in only electric lighting industry, in only two countries.

Continuing on the same vein, variables like culture, reward and compensation systems, leadership and degree of external market competition were found by **Franco and Bourne (2003)** to influence channel performance. Further variables like perception of organizational orientation, culture, internal emphasis on financial vs marketing related achievements were tested by **Paswan (2003)** and found to play a profound role in channel management decisions.

Trust, respect and concern for mutual welfare in relationship with channel intermediaries are of great strategic importance to improve channel

performance. The concept of equity in channel relationship thus provides a new approach in which channel relationships are included in the firm's strategic planning and implementation. **Mathur (2013)** proposed five key drivers of channel equity - communication, trust, commitment, dependence, and customer orientation and that relationship specific investment will have favourable impact on the drivers of channel equity and would enable firms to build their channel equity. The favourable impact of relationship-specific investments is moderated by the relationship phase, and external uncertainty. The domain of channel strategies discussed hitherto has been restricted to manipulation of factors like power and influence.

The concept of generic strategies was applied by **Wren (2007)** to the domain of channel management. He examined the relationship of different channel structures; specifically channel power, control and vertical integration on the choice of generic channel strategies of cost leadership, differentiation, focus, and combination strategies. He developed propositions that firms which are highly vertically integrated would choose a low cost strategy, whereas those with low levels of vertical integration would choose a differentiation strategy and those with moderate levels of vertical integration would choose a combination strategy. **Porter (1980)** was of the view that objective performance measures would improve performance of cost leaders, whereas **Lassar and Kerr (1996)** were of the view that cost leaders maintained arm's length control relationship which did not allow behavioural interventions to influence their performance. On the other hand, in case of differentiators,

Govindarajan and Fisher (1990) found that using behavioural measures comprising subjective non-financial parameters were more influential to impact their performance.

Drawing from concepts of generic strategies of **Porter (1980)** and concepts of Balanced Scorecard expounded by **Kaplan and Norton (1992)**, an integrated model for measuring marketing channel performance was developed by **Valos and Vocino (2006)**, with measures for various facets of channel performance covering aspects like internal communication and coordination, internal conflict or ambiguity, which discriminates between efficiency and effectiveness in performance measurement and provides a comprehensive framework for overall performance improvement across channels and integrating market segmentation strategy based on customer lifetime value and channel strategy in terms of channel cost and channel response.

The relevance of the preceding few publications is derived from the emphasis on channel structures, communication, influence and alignment, followed by performance and reward measures to foster successful marketing of new innovative products by marketers through their channel intermediaries.

2.3 LITERATURE REVIEW ON PROMOTION STRATEGIES

Advertising and Sales Promotion through various modes are of the elements in the promotion mix within the 4Ps of marketing mix which are used to spread awareness about a product, develop interest in the product amongst the target audience and influence them through any one or more of the diverse

communication themes to prefer the product over competitor offerings and purchase the product. Marketers formulate communication and promotion strategies and design profitable advertisement and sales promotional campaigns to capture mindshare of potential customers in the most effective manner. The primary challenge for marketers is creating effective advertising to ensure that it not only attracts the target consumer's attention, but also educates the consumer about product benefits and generates interest to prefer and purchase the product. There is a profusion of literature on the domain of advertisement, communication, branding and promotions with regard to extent of coverage and depth in testing variables to arrive at directions for effective promotional interventions. The review will therefore be restricted to relevant literature on promotion of new products in low involvement category and on advertising effectiveness.

Marketing communication provides different opportunities and challenges in high versus low involvement category products and concerning products that predominantly engage their cognitive versus affective faculties. The degree of involvement of consumers with a product category determines their perception in marketing communication and advertisement appeals.

As consumers do not care much about a low involvement category product, they perceive such advertisements as a series of forgettable images and verbose of unread content. **Krugman (1977)** formulated a low involvement theory, wherein he considers high involvement to be more of a left brain activity and low involvement to be more of a right brain activity. Accordingly,

he suggests usage of print medium for high involvement category products, as reading, speaking and logical thinking are left brain activities and usage of television medium for low involvement category products, as perception of images and music are right brain activities. Several researchers have concluded on the basis on empirical evidence on similar lines that memory of images through every type of visual stimulus, including television, print and outdoor media is superior to that of words. Whereas both hemispheres of the brain are capable of perceiving verbal and visual content, when the message is overloaded with visual content, the right brain processing dominates, to which the processor is consciously oblivious and forms the main basis for subsequent product evaluation and purchase behaviour. Advertising effects are largely acquired below the conscious level and stored in the implicit memory. This implicit learning does not use our analytical powers, but it operates continuously, automatically and has an apparently unlimited capacity for storage both in quantity and time. According to **Dens and Pelsmacker (2010)**, consumers recall the brand in advertisements with informational appeals if they are highly involved in the product category, while for lower involvement categories, consumers recall brands with positive emotional appeals. Regarding branding of new products, they are of the view that for advertising brand extensions, marketers need to make sure they stress the distinctiveness of the new product well enough. They further argue that advertisement itself should also be distinctive enough with adequate informational appeals, because of the focus on the newness of the product and its benefits, regardless

of consumers' product category involvement levels. New products with new brand names can attract attention but suffer from lower brand recall.

Vaughn (1986) contributed to the development of understanding of relationship between cognitive and affective processing of commercial communication by enumerating four hierarchy-of-effect types of message perception, based on which he formulated four advertising planning strategies: informative, affective, habitual and satisfaction, as given in Figure 2.2 below.

Figure 2.2 Advertisement Planning Strategies

	Processing of Commercial Communication	
	Cognitive	Affective
High Involvement	Informative Strategy Learn-Feel-Do	Affective Strategy Feel-Learn-Do
Low Involvement	Habitual Strategy Do-Learn-Feel	Satisfaction Strategy Do-Feel-Learn

Source: Modified from Foote, Cone and Belding Grid (Vaughn, 1986)

Heath, R. (2000) argues that most responses of consumers to advertisements are low involvement processing in nature and provides a Theory of Low Involvement Processing of advertising, which operates through the repeated processing of elements at low attention levels leading to the gradual establishment of meaningful brand associations in consumers, as follows:

- Consumers consider most reputed brands to be undifferentiated on performance and hence do not accord much importance to knowledge about brands. Brand decisions are not made rationally but tend to be made intuitively. Most advertising is processed at very low attention levels using low involvement processing.
- Low involvement processing is a cognitive process, not subconscious or unconscious. It uses very little working memory, which means it is poor at interpreting messages or drawing conclusions from advertisements. It simply stores all stimuli as an association with the brand.
- The way our long term memory works means that the more often something is processed, the stronger it links to the brand. Thus it is these associations repeatedly stored via low involvement processing which tend to define brands in our minds and influence intuitive brand decisions.
- Creativity increases the attention paid to advertisements. It is rarely powerful enough to initiate the sort of high involvement processing needed to interpret and store complex messages. But it does strengthen the linkage between the association and brand.
- The effectiveness of brand associations in influencing intuitive brand choice does not depend on recall of the advertising that created them. This means that advertising itself does not have to create high awareness to be recalled in order to be influential.

Common wisdom on effectiveness of advertisement and sales promotions has been challenged by **Abraham and Lodish (1990)**, who opine that television advertisements have led to increased sales in only half the instances tested, in the case of trade promotions, only 16% instances studied across 65 product categories have resulted in incremental sales, which lead them to conclude that many companies could improve profitability by restrained expenses on advertisements and promotions. The traditional notions of marketers of continually raising expenditure on advertisement to promote their brand and increase sales are some of the myths that they have argued against. They also advocate greater usage of empirical studies on effectiveness of advertisements to justify continued expenditure.

Echoing concerns on devising means to check economics of soaring advertising expenditure, researchers have developed a model for optimum level of advertising. **Teng and Thompson (1983)**, **Dockner and Jorgensen (1988)** and **Krishnan and Jain (2006)** have opined that the determinants of optimal advertising are advertising effectiveness, discount rate, and the ratio of advertisement to profits. Based on the dynamics of these factors, the optimal advertising takes decrease-increase, increase-decrease, monotonically increasing or monotonically decreasing shape. A high discounted advertising coefficient and a low advertising-sales ratio recommends an advertising increase, while a low discounted advertising coefficient and a high advertising-sales ratio recommends an advertising decrease.

Sales promotions have grown significantly over the years, accounting for a major chunk of marketing budgets. They often result in achieving quick spurts in sales over a short time. Hence marketers are increasingly inclined to tilt promotional mix in favour of promotions. Common forms of promotions have been coupons, seasonal price discounts, sweepstakes, contests, free samples, trial packages, loyalty reward programs, free gifts and free samples. Marketers are becoming increasingly creative with their promotions to consumers.

One of the most common types of promotion involves the offer of a reward, free gift or gratification with the purchase of a product. They are two distinct types, based on timing of the reward, immediate or delayed. **Kim (2013)** examined the relative effectiveness of immediate versus delayed promotion and concluded that in case of variety seeking purchase behaviour, which involves an element of higher perception of risk, delayed promotion is more attractive. On the other hand, some of the offers add an element of uncertainty by either not specifying the exact free gift or by offering an array of possible free gifts, making the exact one uncertain. Several researchers provided insight beneficial or detrimental effect of to such uncertainties in promotion design. Uncertainty interferes with the pattern seeking thought process of the human mind, generates anxiety, and individuals people take action to reduce this anxiety by acquiring information to reduce it (**Loewenstein, 1994; Calvo and Castillo, 2001**). There is also evidence in favour of the opposite view that individuals expect the best possible outcome when there is uncertainty about the outcome (**Lee and Qiu, 2009; Goldsmith and Amir, 2010**) and they are

therefore likely to be favourable to purchase. **Laran and Tsiros (2013)** built on these studies and concluded that in case affective purchase decisions, introducing uncertainty increases purchase likelihood while introducing uncertainty decreases purchase likelihood in case of cognitive purchase decisions.

2.4 LITERATURE REVIEW ON CONSUMER BEHAVIOUR

Consumer behaviour has been keenly studied by researchers and a rich literature on the subject has been developed. Consumer behaviour theories propose that consumers actively search for and use information to make informed purchase decisions. This assumes a rational approach in treating the consumer as intelligent, thinking and with problem solving ability to make logical decisions (**Markin and Narayana, 1975**). However, consumer behaviour on many occasions appears irrational as it does not involve extensive information search or a comprehensive evaluation of alternatives (**Olshavsky and Granbois, 1979**).

This led theorists to view consumer behavior in terms of a two-fold dichotomy; low involvement consumer behavior and high involvement consumer behavior (**Engel and Blackwell, 1982**). Interest, needs, values and enthusiasm in different product categories vary in degree amongst consumers. Involvement refers to the response of consumers to a product category, based on the levels of these variables. **Beatty and Smith (1987)** established that Involvement is positively related to active information search covering media

and sales outlets, attitude towards and time spent on shopping. The level of involvement with a product category in terms of low or high involvement indicates that the impact of communication is different and that different stimuli are needed to attract their attention (**Krugman, 1965**).

In the study of low versus high involvement states, the construct of involvement has been defined and involvement scales have been developed to ascertain product specific involvement of individuals, which encompasses emotional, personal and social status involvement. **Zaichkowsky (1985)** developed a semantic differential scale to measure the construct of involvement for products. He developed the Personal Involvement Inventory “to measure involvement with product purchase decisions”. **Laurent and Kapferer (1985)** created Consumer Involvement Profiles by studying various facets like perceived importance of the product, risk, pleasure and sign value and suggested segmentation of the market can be attempted based on involvement profile, since consumers can be active or passive to advertising and marketing communications depending on their level of involvement, so that even for low involvement category products, consumer profiles can reveal consumers being high on certain facets, which can be identified and targeted.

Bauer et. al. (2006) proposed a product involvement category dependent model of consumer decision making styles and encouraged future researchers to further investigate this relationship that products and product involvement have on the decision-making styles exhibited by consumers.

Involvement is a personal phenomenon, although it expresses an individual's views and feelings about an object and how they respond to an object, according to **VonRiesen & Herndon (2011)**. They also differ in duration of time expended in evaluating a product, their search patterns and the quantum alongwith the extent of detail of information they seek.

2.5 LITERATURE REVIEW ON NEW PRODUCT ADOPTION

A new product needs to be perceived as different, improved with features and benefits that meet social, functional, experiential and aspirational needs of consumers. According to **Ziamou (1999)**, the degree of newness is perceived differently by producers and consumers. In most of the studies, new products have been designated as such based on the view of the producer. There are some other categories of new products classifications (**Robertson, 1971; Booz et. al., 1982; Gatignon and Robertson, 1991; Cooper et. al., 2002; Ziamou, 2002; Ofek and Sarvary, 2003**), all of which are based on the extent of newness or degree of innovation of the product. Some new products are new to the market, some of them are new to the producer, and some are totally new. Some are upgradations and improvements over existing products while some are entirely innovative, new to the world products. Ofek and Sarvary (2003) have introduced the category of new to the customer. All of these classifications indicate product features and performance and do not give cognizance to perception of consumers on newness or their anticipated response to the new products.

Adopters of an innovation were classified by **Rogers (2003)**, in his classic work - *Diffusion of Innovations*, first published in 1962, according to the timing of their adoption into: (1) Innovators; (2) Early Adopters; (3) Early Majority; (4) Late Majority; and (5) Laggards. According to Rogers (2003), other than innovators, who constitute the first two and one-half percent, adopters are influenced in the timing of adoption by social influence, which increases for later adopters, alongwith imitation in varying degrees.

Based on the this seminal work of Rogers published in 1962, **Bass (1963)** developed a model of conditional likelihood of adoption at a time, as a linear function of number of previous adoptions, based on interplay of innovation and interplay. This model came to be known as the Bass Model. Further, Bass developed the model theoretically and it was empirically tested on 11 consumer durables to be able to predict sales of new products **Bass (1966, 1969)**. Thus, Bass Model provides a useful framework to view diffusion of new products and technologies to enable realistic estimate of the pattern of sales growth and timing of peak sales. Literature on diffusion of innovations and adoption of new products has grown substantially since then, with most involving further development and extension of the Bass Model. Further Bass has provided challenging directions for future researchers develop a database available to all researchers containing thoroughly researched and refereed historical data series with supporting qualitative information, data collection methodology, data quality assessment, and so on, containing many product categories from many different countries with series such as sales, adoptions,

penetration, prices, advertising, generational, and other data that diffusion modelers may require.

The primary concepts examined by researchers to unearth factors of adoption of new products by consumers, range from awareness or familiarity, involvement and expertise at the level of individual characteristics of the consumer to product characteristics like newness, complexity and price to psychographic factors like domain specific consumer innovativeness and opinion leadership.

Kalish (1985) opined that adoption of a new product is preceded by and is conditional on awareness and adoption occurs if the perceived risk adjusted value of the product exceeds selling price of the new product. Continuing further along the lines of awareness and familiarity with a domain, **Moreau et. al. (2001)** showed that consumers who have developed expertise in the primary domain of a new product rapidly adopt the new product but resist adoption of a radically new category disrupting product, as their expertise decreases their understanding of the product's benefits.

Ziamou and Ratneshwar (2002) extensively researched the role of information shared by marketers in influencing consumer perception of new high-technology product performance uncertainty. They are of the view that more information is not always better in reducing performance uncertainty and it depends on whether a new interface is combined with a new functionality or

with a pre-existing functionality. In the former event consumer uncertainty is increased, whereas in the latter it is decreased.

Taylor-West et. al. (2013) concluded that in case of low complexity products, adequate information needs to be supplied by marketers so that consumers have a clear understanding of the product and its functionalities. Their research conclusions support a similar prior view by **Rogers (1995)** who had stated that high degree of complexity of a new product can become a potential barrier to adoption by consumers. Taylor-West et. al. (2013) further conclude that in case of new products which contain complex innovative components, the technology, usage and benefits need to be explained in detail to avoid such products perceived by consumers as too complex and therefore excluded their consideration set. They have provided directions to future research to investigate the source and process of information search by consumers. This would provide valuable information for developing marketing communication, promotion and channel strategies to disseminate requisite product and application information to counter adoption barriers.

Adoption decisions were found to be self-reinforcing by **Gounaris and Koritos (2012)** who concluded that “the decision to adopt improves the understanding of adopters regarding the benefits delivered by an innovation. Consequently, they hold a precise, less ambiguous perception of how specific innovation attributes translate into benefits. Hence, when recalling the decision process through which they adopted an innovation, adopters relate specific innovation attributes, including specific benefits received.” They have given

directions for future research to examine a holistic model to improve the understanding of all the parameters that influence the intention of a consumer to adopt an innovation.

Rogers (2003) concluded that the decision to adopt an innovation is a function of five distinctive innovation attributes, namely relative advantage, compatibility, complexity, trialability, and observability.

Wee (2003) confirmed and built on the findings of Rogers (2003) in the domain of electronic durables to conclude that the seven most important factors in adoption of new consumer, ranked in order of importance are trialability, compatibility, relative advantage, observability, complexity, image and perceived risk of adoption.

Moving on from the approach of individual's interaction with the product to alternate approaches, we find two major approaches have been used to understand new product adoption. One approach uses the aggregate model, which examines the consumer's traits after the adoption process has taken place and gives primacy to social influence on an individual. The second approach resorts to contingency models that explore an individual's personal predispositions.

In the first approach, according to the theory of diffusion a new product gets accepted and adopted gradually over time, as word of mouth spreads out from the adopters and reduces the uncertainty regarding the product effectiveness in the minds of the potential adopters. Researchers have provided models

assuming heterogeneous population of susceptible individuals. Consumers actively consider, deliberate and solicit opinion of influentials in society, to decide on adoption and usage. Influentials have been categorised under various constructs like Lead Users (**von Hippel, 1986**), Heavy Users (**Godes and Mayzlin, 2009; Iyengar et al., 2011**), Market Mavens (**Feick and Price, 1987**), Social Connectors (**Goldenberg et al., 2006**), Social Hubs (**Goldenberg et al., 2009**), Experts (**Goldenberg et al., 2006**), Influentials (**Watts and Dodds, 2007**), Opinion Leaders (**Katz and Lazarsfeld, 1955; King and Summers, 1970; Flynn, et al., 1996; Rogers, 2003**) and Innovative Consumers (**Goldsmith and Hofacker, 1991**).

The construct of innovativeness was conceptualized and introduced into consumer behaviour literature by **Midgley and Dowling (1978)**. Innovativeness is 'the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a system' as defined by Rogers (2003). Dimensions of Innovators are that they are hungry for and gather information on their own, take greater risks, they not influenced by others, wish to own newest products and are somewhat price insensitive (**Goldsmith, 2001**) thus making them early adopters. Additionally dimensions of innovativeness are relatively affluence, self confidence, self-respect, knowledge, logic, sensibleness and intelligence (**Clark and Goldsmith, 2006**). The construct of consumer susceptibility to interpersonal influence is the tendency to learn about products and services by observing or seeking information from others and willingness to conform to their expectations

regarding purchase decisions (**Bearden et. al., 1989**). Susceptibility is dependent on cultural assimilation of interpersonal influence (**D'Rozario, 2001**). Susceptibility to interpersonal influence is measured, based on the dimensions of informational influence and utilitarian influence (**Park and Lessig, 1977**). There is an inverse relationship between susceptibility and innovativeness (**Manning et. al., 1995; Lalwani, 2002**).

Opinion Leadership is characterized by domain specific interest and knowledge, eagerness to discuss and disseminate information with the intention to persuade others and influence their opinion (**Katz and Lazarsfeld, 1955; King and Summers, 1970; Myers and Robertson, 1972; Flynn et. al., 1996; Rogers, 2003**). King and Summers (1970) studied the concepts of opinion leadership and word of mouth publicity and their role in influencing new product adoption. Thereafter there have been numerous studies on opinion leadership. Myers and Robertson (1972) studied greater number of dimensions of opinion leadership than previous studies and concluded that opinion leadership was correlated to domain knowledge and innovative behaviour, without any significant demographic differentiation and introduced the concept of two way influence, where the opinion leader was only somewhat more influential than the audience. However, opinion leadership scales have been criticized for a lack of psychometric soundness and for having low external validity owing to differences across cultures (**Childers 1986; Flynn et. al., 1996**).

The construct of Market Maven was first conceptualized and described by **Feick and Price (1987)** as highly involved in the marketplace, seek and acquire marketplace information on various kinds of products, places to shop. They are heavy users of coupons (**Price et al., 1988**), more interested in smart buying (**Slama et al., 1992**), have larger evoked sets (**Elliot and Warfield, 1993**) than others who are not market mavens. They have been aptly described psychographically by **Wiedmann et. al. (2001)** as highly interested in and involved with the marketplace. They are knowledgeable about shopping and are keen to share their knowledge, expertise and opinion with other consumers in their social circle, (**Goldsmith et al., 2003**), who seek information and consult market mavens to arrive at informed market decisions. There are many dimensions of the above consumer behaviour constructs which are common and overlapping, however notable differences exist.

The influence of societal motivators were studied by many researchers. **Venkatesh et. al. (2003)** concluded that societal influence is a major factor in decision to adopt a superior technology based innovation. **Deacon et. al. (2003)** have studied inhibitions to adoption of new products in food industry and have provided three recommendations to marketers to succeed in new product introduction, stimulate emotional attachment by consumer participation, build enduring involvement with opinion leaders and develop network to promote word of mouth publicity.

A recent study by **Risselada et. al. (2014)** conclusively stated that “social influence affects adoption through different social influence variables”. Their

findings have implications in development of referral campaigns and provide guidance to social media marketers. They also advise that marketers promote referrals heavily immediately after new product introductions, as the effect of referrals decreases over time. Major gaps in their studies was inclusion of only direct marketing data and ignoring mass marketing and channel based marketing situations.

In the second approach, concepts of optimal distinctiveness have been studied by some researchers. Social identity is derived variably amongst individuals on a continuum with need for uniqueness, distinctiveness, individualism and differentiation at one end and the need for similarity, validation and assimilation at the other end. **Timmor and Katz-Navon (2008)** conclude that an individual's decision to adopt a new product is affected by the size of consumers who have already adopted the product and is dependent on the individual's predisposition towards the opposing needs for assimilation or distinctiveness. **Iyenger et al. (2011)** studied social contagion operating over network ties in adoption of new drugs by physicians and found that adoption is affected by usage volume of peers, which is likely to arrive from enhanced source credibility.

In an earlier study, using this approach of an individual's predisposition, **Manning et. al. (1995)** developed constructs of consumer novelty seeking and consumer independent judgement and they are of the view that the former construct is positively related to early stages of the adoption process, whereas the later construct is associated with later stages of the adoption process. The

former refers to the tendency of the individual to seek new product introduction, while the latter refers to the extent to which an individual takes new product adoption decision, without depending on any communication from others. Further, they reported finding that these measures were not domain specific but were generalized across product categories.

The rich literature on the on new product diffusion and adoption process, various theories on the diffusion mechanism, psychographic profiles and predispositions of early adopters and their role as influential in the marketplace from mid 1950s to current research have been reviewed and synthesized by **Nejad et. al. (2014)**. They have organized the research literature on influentials in four interrelated areas: Influence on Others; Identification of Influentials; Targeting Influentials; and Diffusion Outcomes and integrated theories of social influence, social networks, and social learning, and offered four primary mechanisms through which consumers influence each other in the diffusion process, to provide a comprehensive, systematic, and structured review of extant research on the role of influentials and influence processes in new product diffusion, and provide researchers in this field with an integrative view and a map for future research. They have also recommended directions for future research in three crucial areas which have the greatest potential for impacting new product marketing decisions, which are first, the development/selection of metrics for measuring the impact of influential on diffusion, secondly, the dynamics of diffusion processes related to time and thirdly, the role and impact of negative influentials.

However, researchers have also professed contrarian views challenging the dominant idea in literature on new product adoption that individuals are categorized as innovative; that they are identifiable by socio-economic characteristics; that marketing communications can be made more effective by targeting communications at opinion leaders; and that a superlative set of product features will accelerate the pace of adoption. Two such instances of researchers professing views contrary to diffusion theory and relying more on traditional need fulfillment approach of consumer behaviour are presented next. According to **Laaksonen (1994)**, consumer perceptions of new products are guided by their perceived relevance of the product to the individual in terms of needs, goals, values, knowledge and attitude, while **Little (2001)** provides contrarian explanations for new product adoption, such as: mood related activity; availability of finance; imitation of friends or colleagues; direct or indirect persuasion, ability to satisfy specific need and the moderation effects of perception of risks, uncertainties, costs and benefits.

2.6 LITERATURE REVIEW ON SYNTHETIC LUBRICANTS

Synthetic lubricants have been developed for superior performance compared to conventional mineral based oils. Benefits of synthetic lubricants have been presented in Appendix B of the Society for Automotive Engineers, “**Progress in Technology Series 22**”, 1980, based on studies which were conducted during the 1970 and 1980. The superior performance features of synthetic engine oils are:

1. Enhanced engine cleanliness
2. Improved fuel economy
3. Lower oil consumption.
4. Excellent cold starting and low temperature fluidity
5. Outstanding performance in extended oil drain field service
6. High temperature oxidation resistance
7. Outstanding Single and Double Length SAE-ASTM API E and F Performance Tests (note API SE and SF specs were the latest at the time of the testing)
8. Excellent wear protection.
9. Extended drain capability.

The above benefits lead to lower downtime of equipment, lesser replacement of worn out machine parts, reduced expenses on lubricants procurement, inventory, handling and disposal, reduced manpower expenses and reduced environment pollution issues.

Additionally reduced machine operating temperatures, vibration levels and mechanical losses improves mechanical efficiency and decreases energy consumption according to **Barrett (2007)**. He concludes that although high initial purchase price may be an inhibitor for equipment owners in deciding to use synthetic oils instead of mineral oil based lubricants, “peace of mind or pride in ownership will remain a major driver” and he predicts global market for synthetic lubricants to increase in future with continual introduction of more powerful, efficient, durable and maintenance free equipment.

The prices of fully synthetic lubricants are typically four to six times of mineral oil lubricants (Barrett, 2007), however prices of semi-synthetic lubricants or blended synthetic lubricants are typically in the range of one and half to two and half times of that of mineral oil lubricants. Barrett (2007) cautions that continued usage of synthetic lubricants at commercial scale would have to be justified by quantification of benefits derived from such usage.

2.7 LITERATURE REVIEW ON LUBRICANTS MARKETING

Academic research in marketing is dominated by only a few industries like fast moving consumer goods like personal care goods, toiletries, household cleanliness items and so on and consumer durables like electronic goods, cars and so on. In the service category, researchers have focused on the hospitality, tourism and medical care industry. A low involvement product category like automotive lubricants has been largely ignored by academia and researchers on marketing, as inferred from the miniscule representation of the industry in published research literature.

The automotive lubricant buying behaviour of four wheeler motor vehicle consumers in Delhi was studied by **Srivastava (2013)** who created a perceptual map of price against quality for popular brands wherein Castrol and Servo were placed in the bracket of perceived high price and high quality, Veedol and Superfleet were placed at the bottom rung, while MAK and HP were placed at an intermediate level. The researcher concludes that purchase

decision of consumers had positive correlation with price and consumer benefits while it had negative correlation with quality and accessibility. Consumer perceptions are formed as a result of brand positioning developed by brands. Hence brands which are better positioned in minds of consumers are expected to be better placed in marketing of new innovative products.

On similar lines **Pawar and Khandelwal (2012)** studied rural markets in Maharashtra to gain insight into perceptions of rural consumers in purchase of automotive lubricants. They have used factor analysis to arrive at three primary factors namely, branded quality, expert advice and value for money which determine purchase of automotive lubricants by rural consumers. Consequently they recommend marketers to improve awareness of their brand through increased advertisement and promotions. They also recommend encouraging and incentivizing mechanics to promote their brand, as according to them “service stations and mechanics play the role of gatekeeper in the purchase of automotive lubricants”.

These two studies were geographically dispersed by cover northern and western India, and covered urban and rural markets respectively. Both indicated that purchase decisions were governed by perceptions of brand and value for money. As highlighted and recommended by Pawar and Khandelwal (2012), lubricants marketers are already well versed with criticality of the role played by mechanics in influencing purchase of automotive lubricants and have therefore devised aggressive incentive programmes for mechanics, enticing them to promote their brands. However, it would be of interest to

academicians and marketers to know the preferred means advertisement and promotion which contribute effectively to build brand image in the minds of consumers also to know about other possible sources of influence on not only consumers, but also mechanics.

2.8 RESEARCH GAPS

Based on the review of literature, research gaps have been identified where no research study has been done on the following areas:

- 2.8.1. Awareness, adoption and usage of synthetic lubricants for two-wheeler motor vehicles in India.
- 2.8.2. The most effective media to create awareness of a new product in low involvement category like synthetic lubricants.
- 2.8.3. Effect of sales promotion events in promoting adoption of new products in low involvement category.
- 2.8.4. Diffusion of information on introduction of synthetic lubricants, a new product in low involvement category and its effect on adoption.
- 2.8.5. Sensitivity to high prices, value for money and personal economic factors on new product adoption.
- 2.8.6. The effect of satisfaction on adoption of a new product in low involvement category on its continued usage and on brand loyalty.

CHAPTER 3: OBJECTIVES AND HYPOTHESES

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Research Objectives and Hypotheses developed are discussed in subsequent sections.

3.1. RESEARCH OBJECTIVES

Research Objectives have emanated from research problem statements in section 1.8 and have been developed for this research, after an in-depth study of the domain and review of literature, detailed in chapter 2. In finalization of these research objectives, due consideration has been accorded to critically examine efficiency and effectiveness of current practices of marketers, reveal underlying motives and factors of consumer behaviour, while ensuring practicality of these objectives. Alongside consumer behaviour dynamics, the role of mechanics, who function as key marketplace influencers, has also been given adequate attention.

The research objectives have accordingly been developed are as follows:

1. To review the marketing channel and promotion strategies adopted by lubricants marketing companies.
2. To assess awareness of two-wheeler motor vehicle users and mechanics of independent workshops servicing two-wheeler motor vehicles, regarding synthetic lubricants for two-wheeler motor vehicles, as a new and innovative product category, which is different and improved compared to mineral oil based lubricants.

3. To study the buying behaviour of two-wheeler motor vehicle users with respect to synthetic lubricants for their two-wheelers.
4. To study the impact of the marketing channel and promotion factors in influencing the purchase and usage of synthetic lubricants for two-wheeler motor vehicles by two-wheeler users.
5. To study the role of the marketplace influencers in the purchase and usage of synthetic lubricants by two-wheeler users.
6. To study the factors influencing recommendations of two-wheeler mechanics, who act as key influencers to two-wheeler users, regarding purchase and usage of synthetic lubricants for two-wheelers.

3.2. RESEARCH HYPOTHESES

In order to achieve the objectives mentioned in Para 3.1, a set of 48 hypotheses have been formulated, which have been tested and conclusions drawn on the basis of the test results. The hypotheses are given below in pairs of null hypothesis and alternate hypothesis:

H_{01} : There is no difference in awareness levels of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral oil based lubricants for their two-wheelers, with regard to (a) the product category of synthetic lubricants for two-wheelers, (b) availability of synthetic lubricants in local market and (c) benefits of synthetic lubricants.

- H₁₁ : There is significant difference in awareness levels of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral oil based lubricants for their two-wheelers, with regard to (a) the product category of synthetic lubricants for two-wheelers, (b) availability of synthetic lubricants in local market and (c) benefits of synthetic lubricants.
- H₀₂ : There is no difference in involvement levels in the purchase process of lubricants of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral oil based lubricants for their two-wheelers.
- H₁₂ : There is significant difference in involvement levels in the purchase process of lubricants of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral oil based lubricants for their two-wheelers.
- H₀₃ : There is no difference in interest levels of two-wheeler motor vehicle users who use synthetic lubricants for their two-wheelers compared to those who use conventional mineral oil based lubricants, in acquiring knowledge about synthetic lubricants for their vehicle.
- H₁₃ : There is significant difference in interest levels of two-wheeler motor vehicle users who use synthetic lubricants for their two-wheelers compared to those who use conventional mineral oil based lubricants, in acquiring knowledge about synthetic lubricants for their vehicle.

- H₀₄ : There is no difference in (a) price sensitivity due to higher initial purchase price and (b) perception of greater value for money of synthetic lubricants compared to conventional mineral oil based lubricants, as perceived by two-wheeler motor vehicle users who use synthetic lubricants for their two-wheelers compared to those who use conventional mineral based lubricants.
- H₁₄ : There is significant difference in (a) price sensitivity due to higher initial purchase price and (b) perception of greater value for money of synthetic lubricants compared to conventional mineral oil based lubricants, as perceived by two-wheeler motor vehicle users who use synthetic lubricants for their two-wheelers compared to those who use conventional mineral based lubricants.
- H₀₅ : There is no difference in vehicle characteristics like (a) category, (b) age, (c) make and (d) engine cubic capacity of the two-wheeler motor vehicles of users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.
- H₁₅ : There is significant difference in vehicle characteristics like (a) category, (b) age, (c) make and (d) engine cubic capacity of the two-wheeler motor vehicles of users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.

- H₀₆ : There is no difference in demographic factors like (a) age, (b) formal education, (c) gender, (d) marital status, (e) occupation and (f) family monthly take-home income of two-wheeler motor vehicle users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.
- H₁₆ : There is significant difference in demographic factors like (a) age, (b) formal education, (c) gender, (d) marital status, (e) occupation and (f) family monthly take-home income of two-wheeler motor vehicle users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.
- H₀₇ : There is no difference in consumer behaviour characteristics like (a) Customer Innovativeness, (b) Opinion Leadership, (c) Market Mavenism and (d) Two-Wheeler Enthusiasm exhibited by two-wheeler motor vehicle users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.
- H₁₇ : There is significant difference in consumer behaviour characteristics like (a) Customer Innovativeness, (b) Opinion Leadership, (c) Market Mavenism and (d) Two-Wheeler Enthusiasm exhibited by two-wheeler motor vehicle users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.

H₀₈ : There is no difference in effect of marketing promotions of lubricants marketers by advertisement through various media, namely (a) In-store display, (b) In-store posters, (c) Outdoor hoardings, (d) Newspaper advertisements, (e) Advertisement in Magazines, (f) FM Radio advertisements, (g) Television advertisements and (h) online advertisements, on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

H₁₈ : There is significant difference in effect of marketing promotions of lubricants marketers by advertisement through various media namely (a) In-store display, (b) In-store posters, (c) Outdoor hoardings, (d) Newspaper advertisements, (e) Advertisement in Magazines, (f) FM Radio advertisements, (g) Television advertisements and (h) online advertisements, on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

H₀₉ : There is no difference in effect of marketing promotions of lubricants marketers by way of various below the line promotional activities namely (a) sales campaigns at petrol pumps, (b) sales campaigns at lubricants shops, (c) discounts, (d) free gifts and (e) lucky draws on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

H₁₉: There is significant difference in effect of marketing promotions of lubricants marketers by way of various below the line promotional activities namely (a) sales campaigns at petrol pumps, (b) sales campaigns at lubricants shops, (c) discounts, (d) free gifts and (e) lucky draws on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

H₀₁₀: There is no difference in effect of marketplace influencers like (a) Innovative Customers, (b) Opinion Leaders, (c) Market Mavens, (d) Social, online media including blogs and product category influencers like (e) Motor Vehicle Mechanics and (f) Salespersons of Lubricants shops on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

H₁₁₀: There is significant difference in effect of marketplace influencers like (a) Innovative Customers, (b) Opinion Leaders, (c) Market Mavens, (d) Social, online media including blogs and product category influencers like (e) Motor Vehicle Mechanics and (f) Salespersons of Lubricants shops on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

- H₀₁₁: There is no difference in satisfaction levels of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral based lubricants for their two-wheeler motor vehicle with regard to the perceived performance of the lubricant used by them.
- H₁₁₁: There is significant difference in satisfaction levels of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral based lubricants for their two-wheeler motor vehicle with regard to the perceived performance of the lubricant used by them.
- H₀₁₂: There is no difference in brand loyalty exhibited by two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral based lubricants for their two-wheeler motor vehicle.
- H₁₁₂: There is significant difference in brand loyalty exhibited by two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral based lubricants for their two-wheeler motor vehicle.
- H₀₁₃: There is no difference in perception of mechanics of independent two-wheeler motor vehicle workshops, with regard to influence exerted over users, by recommendation of (a) mechanics themselves and (b) lubricant shop sales persons, between those who recommend synthetic

lubricants and those who recommend conventional mineral oil based lubricants to their clientele.

H₁₁₃: There is significant difference in perception of mechanics of independent two-wheeler motor vehicle workshops, with regard to influence exerted over users, by recommendation of (a) mechanics themselves and (b) lubricant shop sales persons, between those who recommend synthetic lubricants and those who recommend conventional mineral oil based lubricants to their clientele.

H₀₁₄: There is no difference in awareness levels on synthetic lubricants of mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

H₁₁₄: There is significant difference in awareness levels on synthetic lubricants of mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

H₀₁₅: There is no difference in knowledge levels on lubricants and engine lubrication, of mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

H₁₁₅: There is significant difference in knowledge levels on lubricants and engine lubrication, of mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

H₀₁₆: There is no difference in behavioural characteristics like (a) Commercial Motive and (b) Opinion Leadership exhibited by mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

H₁₁₆: There is significant difference in behavioural characteristics like (a) Commercial Motive and (b) Opinion Leadership exhibited by mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

CHAPTER 4: RESEARCH METHODOLOGY

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Research Methodology adopted for this research is described in the following sub sections: the research design, the sources of data, sampling design which contains sampling techniques used and data collection instruments developed.

4.1 RESEARCH DESIGN

A research design is the plan and structure of investigating, so conceived as to obtain answers to research questions (Kothari, 2004). A research design functions as the research blue print for measurement and analysis of data (Creswell, 2003). As such, it is used to show how the major parts of the research project i.e. the samples, measurement of variables, treatments or controls, and methods of assignment work together to try to address the core research questions.

The purpose of this study being to describe the determinants of adoption and usage of synthetic lubricants for two-wheeler motor vehicles, it seeks to describe the phenomena as it exists. Therefore, descriptive research design was be used as it is deemed to be the most appropriate. Various authors recommend the use of descriptive design (Orodho, 2004; Dane, 2000) to produce information that is of interest to marketers. Jackson (1994) contends that all research is partly descriptive in nature, insofar as the descriptive aspect defines and describes the research's who, what, when, where, why, and how, which are some of the questions raised in the study.

4.2 SOURCES OF DATA

Population refers to the entire group of people, events or things of interest that the researcher wishes to investigate and wants to make inferences based on sample statistics (Sekaran & Bougie, 2010).

This research study has been conducted in selected cities in Maharashtra, namely Pune, Nashik, Aurangabad, Solapur and Kolhapur. These have been selected to cover a diverse population size. Pune has the highest two-wheeler population in Maharashtra, with over 1.55 million, Nashik and Solapur have over 0.30 million, Aurangabad has 0.19 million while Kolhapur has 0.17 million,. These cities are industrialized and have a cosmopolitan population from across the country. Smaller cities have not been considered as it would increase time and effort in data collection from samples.

The target population for the study is three sets of people as follows:

4.2.1 Users of 4 stroke petrol engine two-wheeler motor vehicles in Pune, Nashik, Aurangabad and Solapur, who are in a position to exercise their option on the type and brand of lubricant to purchase and use in their vehicle constitute the first set of the target population.

Two-wheeler motor vehicle users normally purchase lubricants at the time when it is required to drain out the existing lubricant in the engine oil sump of their vehicle, as it has exhausted its useful life and fill the engine oil sump of their vehicle with new lubricant. This oil change activity forms a part of the periodic servicing and maintenance of their vehicle and as such is normally

carried out at a two-wheeler vehicle workshop. There are broadly three categories of workshops: the vehicle manufacturing company's authorized service stations, third party branded or franchised workshops and independent workshops. The first two categories of workshops are under contractual obligation to stock, recommend, promote, sell and use a particular type and brand of lubricant. Such lubricants are either original equipment manufacturer approved (or genuine) oils or tied-up with marketers on commercial considerations. Users visiting such workshops are not in a position to exercise their choice of type and brand of engine oil to be used. They do not purchase lubricants separately, but are provided the oil change service as a part of the overall maintenance service. Hence they are excluded from the target population. However, users visiting independent workshops can and do exercise their choice of type and brand of engine oil to be used. They accordingly purchase lubricants at retail outlets selling lubricants. Hence they form the first set of target population.

4.2.2 Owners and mechanics of independent workshops in Pune and Kolhapur which are not authorized service stations of the vehicle manufacturing company or not under contractual obligation to stock, sell and use a particular type and brand of lubricant constitute the second set of the target population.

Two-wheeler motor vehicle users consider mechanics to have better knowledge, experience and expertise than what they themselves have with regard to vehicle operations and maintenance. Hence the opinion of mechanics

is more often than not taken as expert opinion and is followed to a large extent by vehicle users. Mechanics thus act as influencers of vehicle users. Hence they form the second set of target population.

4.2.3 Owners, workshop managers and mechanics of authorised service stations of two-wheeler vehicle manufacturing companies in Pune and Nashik, which are under contractual obligation to stock, sell and use the vehicle manufacturing company's recommended type and brand of lubricant, or also called as the vehicle manufacturer's genuine oils or also called co-branded oils, which are jointly branded with the vehicle manufacturer and the lubricant manufacturing company, constitute the third set of the target population.

These service stations have equipment, mechanics, spares and consumables certified by vehicle manufacturers. They generally have high service standards. After purchase of a new two-wheeler motor vehicle, owners normally avail the initial few free service offers at authorised service stations. Thereafter they exercise the option to either continue to patronize authorised service stations for future servicing and maintenance of their vehicle or visit independent workshops for the same. At authorised service stations, vehicle owners are not in a position to exercise their choice of lubricant and are under compulsion to accept the standard consumables and components specified by the vehicle manufacturer. As a sizeable quantum of lubricant change takes place at these service stations, their influence on vehicle owners' choice is noteworthy. Hence they form the third set of target population.

4.3 SAMPLING DESIGN

Sampling refers to the systematic selection of a limited number of elements out of a theoretically specified population of elements. The rationale is to draw conclusions about the entire population. According to Kothari (2004), the ultimate test of a sample design is how well it represents the characteristics of the population it purports to. The reason for sampling in this study is to lower cost, increase accessibility to study the population and increase the speed of data collection.

The sampling design comprised of two steps of sampling for the first set of target population - users of 4 stroke petrol engine two-wheeler motor vehicles. In the first step, a pilot survey was carried out on a sample size of 225. Based on experience gathered during the pilot survey, certain changes were made in the approach to data collection which is detailed in a subsequent section. Thereafter, in the second step, final survey was carried out on a sample size of 400. Hence, the total number of samples surveyed in the first set of target population was 625.

The sampling design was a single step sampling for the second set of target population - Owners and mechanics of independent two-wheeler vehicle workshops, as well as the third set of target population - Owners, workshop managers and mechanics of authorised service stations of two-wheeler vehicle manufacturing companies.

4.3.1 PILOT SURVEY

A sample size of 225 is adequate for a pilot study, according to Kothari (2004). A pilot study was therefore conducted by intercepting users of 4 stroke petrol engine two-wheeler motor vehicles and administering questionnaires to those amongst them who were willing to respond. These respondents were intercepted at 6 independent workshops, 4 lubricants shops, 6 lubricants cum spare parts shops and 2 petrol pumps across Pune during the period from January to February 2014. The respondents were apprised that the survey being conducted is for academic purpose only and has no commercial intentions. While the respondents were filling up the questionnaires, they were questioned whether they understood the items, which words were difficult or ambiguous, whether they could recollect their purchase behaviour and whether they were reluctant to share any information sought. On completion of responses, they were re-checked and re-clarified by the researcher verbally with the respondent for certain items to verify that there is no gap between their actual experience, opinion or purchase behaviour and the responses given by them in the questionnaire. During such checks, some respondents chose to change their responses to certain items whereas 7 respondents exhibited considerable lack of seriousness and incoherence in their response. Hence those 7 were rejected. Finally, a total of 232 users were intercepted and their responses obtained, out of which 7 responses were rejected and 225 were found suitable, which were accepted for data analysis.

4.3.2 FINAL SURVEY

First set of target population

The sample size for the final survey of the first set of the target population namely, users of four stroke two-wheeler motor vehicles in Pune, Nashik, Aurangabad and Solapur, has been worked out in accordance with Kothari (2004). The total two-wheeler motor vehicle population in the above cities, out of which we have derived the sample population, is given in Table 4.1 below.

Table 4.1 Two-Wheeler Population as on 31.03.2011

City	Motor Cycles	Scooters	Mopeds	Total (N)
Pune	1050258	307213	194497	1551968
Nashik	225608	51859	23410	300877
Aurangabad	148433	26544	18901	193878
Solapur	259972	42538	62296	364806
Total	1684271	428154	299104	2411529

Source : TABLE No. 14 Categorywise Motor Vehicles Populations as on 31st March, 2011 in Important Cities of Maharashtra State., Motor Transport Statistics of Maharashtra 2010–2011. Page 117, Retrieved on March 17, 2013 from <http://www.mahatranscom.in/statistics.aspx>.

The above source of motor vehicle population data provides breakup of the type of fuel used namely petrol, diesel, LPG or CNG but does not provide the breakup of number of two-wheeler vehicles with two stroke and four stroke engines. As almost 100% of the two-wheeler vehicles use petrol as fuel and as overwhelming numbers of two-wheeler motor vehicles in urban areas, estimated at over 95%, are equipped with four stroke engines, we shall

consider the entire population in Table 4.1 above as the first set of our target population - users of 4 stroke petrol engine two-wheeler motor vehicles, without any loss of authenticity. Taking the above finite population, sample size is determined through the approach based on precision rate and confidence level. These are being specified for this study as follows :

Precision rate : 5% and

Confidence level : 95%, which are considered adequate for the study.

The formula for determining the sample size (Kothari, 2004) is :

$$n = \frac{z^2 \cdot p \cdot q \cdot N}{e^2 \cdot (N - 1) + z^2 \cdot p \cdot q}$$

where, n = sample size, N = population size, z = standard variate at given confidence level. The value of z for confidence level of 95% is 1.96, e = precision or acceptable error, taken as .05 for this study, p = sample proportion and q = p -1. The most conservative sample size can be obtained by maximising 'n', and the sample will result in the desired precision. This is achieved if we take the value of p = 0.5. Sample size, considering p = 0.5 and the other values given above, is thus determined as given in Table 4.2 below.

Table 4.2 Sample Size Determination

City	Population (N)	Determined Sample size (n)	Sample size rounded off for this study
Total of Pune, Nashik Aurangabad and Solapur	2411529	384.0993	400

Sample size for the final survey of the first set of target population - users of 4 stroke petrol engine two-wheelers has therefore been taken as 400. The city-wise breakup of samples is given in Table 4.3 as follows:

Table 4.3 City-wise Samples

City	Total Population (N)	Samples Drawn	Percentage of Samples
Pune	1551968	150	0.010%
Nashik	300877	100	0.033%
Aurangabad	193878	100	0.052%
Solapur	364806	50	0.014%
Total	2411529	400	0.017%

Sampling design of this study follows a combination of judgment and probability sampling. The sample elements – users of 4 stroke petrol engine two-wheeler motor vehicles were intercepted at major independent two-wheeler motor vehicle workshops, lubricants shops, lubricants cum two-wheeler vehicle spare parts shops and automobile fuel stations (petrol pumps) in the above four cities. These locations were predetermined, on the basis of high number of daily customer footfall, number of two-wheeler motor vehicles visiting and good market reputation.

Based on the experience gathered during pilot survey, care was taken to eliminate such independent workshops that stock and sell lubricants themselves. All major localities of these cities were covered to obtain a well dispersed set of locations. At each location, the two-wheeler users were intercepted and requested to participate whole-heartedly in the study. Only on their willing acceptance, they were administered the questionnaire.

Second set of target population

Sample elements for the second set of target population - Owners and mechanics of independent workshops were convenience sample elements in Pune and Kolhapur in Maharashtra. They were chosen purposively for this research from amongst independent, non-franchised two-wheeler workshops. 65 such mechanics were approached in Jan 2014 with a request for participation in the survey. Out of them 57 mechanics conveyed their willingness and they were administered the questionnaire prepared for them. Out of these 57 responses, 2 were rejected, as they indicated lack of seriousness and 55 were found usable.

Third set of target population

Sample elements for the third set of target population – Owners, workshop managers and mechanics of authorized service stations of two-wheeler vehicle manufacturing companies, also called original equipment manufacturers' dealers, were convenience sample elements in Pune and Nashik. They were chosen purposively for this research from amongst popular and high selling authorised service stations. 15 such authorized service stations were approached, 10 in Pune and 5 in Nashik, in June 2014 with a request for participation in the survey. Owners and workshop managers of all them conveyed their willingness and they were administered a structured interview, on the basis of a prepared list of questions.

4.4 RESEARCH INSTRUMENT

The primary research instrument used to collect primary data was a well-structured questionnaire prepared by the researcher and personally administered to respondents, alongwith face to face interviews with the respondents, to clarify the questions and capture additional insights. Questionnaire was used as it is economical, structured and appropriate to capture primary data to test the hypotheses formed to answer the research questions. Two separate sets of questionnaires were used for data collection from the first and second sets of target population.

Other modes of data capture such as printed questionnaires sent by post or courier, emailed questionnaire, emailed request to access link to online questionnaire and respond to the same was avoided as the response rate may be very low and inaccurate without the possibility to personally cross check and verify the responses. Another mode of approaching randomly selected respondents at their residence or office, as per their convenience, to administer the questionnaire personally was also avoided since the study involves a low involvement product category and respondents may not be able to relate, recollect type of lubricants used and respond with accuracy.

Data on customer footfalls and reputation of the various categories of lubricants sales outlets identified in the preceding section has been collected from pre-pilot focus groups of knowledgeable individuals.

Structured interview was conducted for the third set of target population.

4.4.1 PILOT SURVEY QUESTIONNAIRE

The survey instrument used was a well-structured questionnaire prepared by the researcher. In accordance with Cooper and Shindler (2006), the questionnaire consisted of separate sections for three categories of questions: administrative questions, classification questions and structured target questions as given in Table 4.4 below:

Table 4.4 Sections of Pilot Survey Questionnaire for Users

Category of Questions	Question numbers	Total Questions	Percentage of Questions
Administrative	i, ii, iii, 33, iv, v	6	8%
Classification	34 to 40 (includes sub questions)	11	14%
Target	1 to 32 (includes sub questions)	59	78%
Total		76	100%

Administrative questions comprised of serial number of the questionnaire, survey location and the survey date and time to be incorporated in three blank cells on the top right corner in the first page of the questionnaire. The respondent's name and signature were sought at the top and bottom respectively, in the last page of the questionnaire. Name of the respondent was sought only to personalize identification of respondents.

Classification questions comprised of demographic and vehicle characteristics of the respondents. In case of gender, apart from male and female, only one common term of transgender was incorporated to include all cases when a respondent would not fit physiologically and psychologically in either male or

female gender. In case of marital status only single and married classes were used to avoid any further detailing into the class of single, like, unmarried, divorced, separated, widow, widower and so on. Occupation was also classified under broad categories avoiding large categories which would serve limited purpose. Income status of only the respondent was not sought as a large number of two-wheeler users are students, who do not have any personal income, but rely on their parents' or guardians' incomes. Hence to ascertain their economic status, their family's take home income has been sought. Mobile phone number, email id and postal address of respondents was not sought as initial discussions revealed that by and large people were reluctant to reveal their contact details.

Target questions formed the bulk and body of the questionnaire. These questions were developed out of in-depth discussions with 15 enthusiastic and knowledgeable two-wheeler users, purposefully chosen by the researcher, to cover interests, attitudes, social relationships and purchase behaviour, in order to unearth factors of influence and seek answers with regard to the research questions. Each section started with explicit instructions on how to respond to the constituent questions in the group. The questions sought responses using a five point Likert scale with "1" indicating "Strongly Disagree" and "5" indicating "Strongly Agree". A blend of both positive as well as negative worded questions was used in the questionnaire.

The questionnaire started with seeking declaration of the primary factor viz. purchase of synthetic lubricants or mineral based lubricants and the brand of

lubricant in question number 1A and 1B respectively. This primary factor is of the most vital importance as this research study attempts to find and measure the difference in constructs, variables and characteristics of sample elements based on this factor. Brand of lubricant has been sought for reporting descriptive statistics only and not to test any hypothesis.

Thereafter, the questions were grouped into items representing individual dimensions of the constructs being tested. Each construct included multiple dimensions. Standard scales on marketing and consumer behaviour existing in literature, created, tested and perfected by past researchers were referred to but not used to the full extent for the following reasons:

1. All the popular marketing scales were developed by researchers in North America and Europe wherein the usage of certain wordings are alien to commonly used English in India. Changes in few wordings and phrases were therefore necessitated to increase acceptance of the questionnaire.
2. The scales were developed for exhaustive coverage of all dimensions representing a construct. Further, only one construct was assessed in each of the individual studies with the objective of developing scales. Thus the numbers of scale items comprising each construct were large. As the current study attempts to cover several constructs, in view of practicality of data collection, it was contemplated to restrict the overall length of the questionnaire so as not to overwhelm the respondents. The scale item thus needed to be truncated without losing out on the critical dimensions.

3. Review of literature revealed existence of several overlapping dimensions of different constructs of consumer behaviour. As the current study attempts to examine the influence of multiple self-designated consumer behaviour profiles on the respondents' adoption and usage behaviour, it was decided to prune the list of dimensions under the standard constructs to weed out such dimensions which indicated proximity in understanding.
4. Moreover, the study does not intend to identify respondents in order to group them into one or more consumer behaviour constructs, but to study the influences of self-designated profile and other socio-economic factors on their adoption and usage behaviour. Hence it was decided to cover all possible factors of influence with adequate importance to the entire range of factors rather than unduly stressing on these constructs by exhaustive coverage of all dimensions as per standard scales available in literature.

The first set of target questions numbers 2A to 2G comprised 7 questions, to measure the construct of two-wheeler enthusiasm. This ensured that interest respondents were captured early and that they were more willing and eager to proceed with their response. The scale items are as follows:

2A. I am emotionally very attached to my two-wheeler.

2B. I derive great pleasure in riding my two-wheeler.

2C. I take keen interest in knowing about latest developments on two-wheelers

2D. I like reading magazines on two-wheelers.

2E. I avoid looking at newspaper advertisements of two-wheelers.

“(negative)”

2F. I do not visit websites having information about two-wheelers

“(negative)”

2G. During the last six months, servicing of my two-wheeler has often

been delayed. “(negative)”

The next set of 6 questions, with question numbers 3A to 3E and 17 related to the construct of involvement of users in the lubricant purchase process. This sequence endeavored to hold the interest of respondents and instigated them to recall actual past purchase behaviour. The scale items are as follows:

3A. I am very particular about which 4T oil to use in my two-wheeler.

3B. I do not bother which 4T engine oil is being put in my two-wheeler by my mechanic. “(negative)”

3C. I myself decide the brand of 4T oil for oil change of my two wheeler.

3D. I always follow my mechanic’s recommendation for choice of 4T engine oil. “(negative)”

3E. I take advice of the lubricants shop salesperson on choosing the brand of 4T engine oil. “(negative)”

17. I take keen interest in the different brands of 4T oils displayed in petrol pumps and lubricants shops.

The next 2 questions, with question numbers 4 and 5 covered awareness of the product category. The questions are:

4. Till today, I was not aware of synthetic 4T oil for two-wheelers.
“(negative)”

5. I may have seen advertisements on synthetic 4T oils, but I have not paid attention to them. “(negative)”

This was followed by 2 questions with question numbers 6 and 7 on awareness of local availability. The questions are:

6. I have come to know today that synthetic 4T oils are available in my local market. “(negative)”

7. I do not remember having seen synthetic 4T oils displayed in any shop or petrol pump. “(negative)”

The next question covered their interest to know about the product, as follows:

8. I wish to know more about benefits of using synthetic 4T engine oils

Awareness of benefits of usage of the product category was covered in the next 4 questions with question numbers 9 to 12.

9. I think synthetic 4T oils give better protection to the engine of two-wheelers than normal 4T oils.

10. I think synthetic 4T oils improve engine performance of two-wheelers.

11. I think synthetic 4T oils need to be changed after much longer kilometer running than normal 4T oils.

12. I think synthetic 4T oils cause lesser smoke emission and are thus environment friendly.

The concept of Price sensitivity was covered in the next question number 13, with the following wording:

13. I feel that initial purchase price of synthetic oils is very high compared to normal 4T oils.

The construct of Value for Money was questioned next by question numbers 14 to 16. The scale items are as follows:

14. I think that as oil change period for synthetic oils is far more than normal engine oils, I get an overall cost benefit advantage over a longer period of time by usage of synthetic lubricants.

15. I think that as oil change period for synthetic oils is far more than normal engine oils, I can save my money by lesser visits to mechanic (in a year) for oil change of my two-wheeler.

16. I feel that using synthetic 4T oils instead of normal 4T oils is a waste of my money as synthetic oils do not provide me more benefits than normal 4T oils.

The construct of opinion leadership was assessed by the next set of 4 questions through question numbers 18, 19, 21 and 22. The scale items are:

18. When I discuss about two-wheelers with my friends, I give them more information than what they give me.

19. I often try to convince my friends to use the brand of engine oil for two-wheeler motor vehicle of my choice.

21. My friends often take advice from me on which engine oil to use for their two-wheeler.

22. I often take advice from my friends on which engine oil to use in my two-wheeler.

Next, the question numbers 20 and 25 covered the construct of Market mavenism. The scale items are:

20. My friends consider me to be a good source of information on taking care for two-wheelers.

25. I enjoy providing information to my friends about new products.

The construct of consumer innovativeness was assessed using question numbers 23 and 24. The scale items are:

23. I greatly enjoy being the first in my social circle to buy new technology products.

24. I enjoy taking calculated risks in buying new technology products.

Brand loyalty was tested using question numbers 26, 27 and 29. The scale items are:

26. I had purchased the same 4T oil earlier also (that I have purchased now) for my two-wheeler.

27. I have carried out oil change of my two-wheeler at the same mechanic.

29. I am not willing to try new high performance 4T oils from any other brand than the one I have been using for my two-wheeler.

Customer satisfaction was covered by question number 28 as follows:

28. I am not satisfied with the 4T oil I am using for my two-wheeler.

The influence of various modes of advertisement was covered in the next set of 8 questions with numbers 30A to 30G.

30. I have chosen the present 4T oil mainly due to:

A. Attractive display in shops

B. Attractive posters in shops

C. Hoardings on roadside

D. Advertisements in newspapers

E. Advertisements in magazines

F. Advertisements on FM radio

G. Advertisements on TV

H. Advertisements on websites

Question numbers 31A to 31E were 5 questions on different means of below the line sales promotion activities as follows:

31. I have selected this 4T oil because of the following:

A. Sales Campaign at petrol pumps

B. Sales Campaign at lubricant shops

C. High discounts received

D. Free gifts received

E. Lucky draw event

The last set of 6 questions in question numbers 32A to 32F covered the influence of social influencers as follows:

32. I have chosen the present 4T oil mainly due to:

A. To try out a new brand and type of 4T oil

B. Advice by a friend who has used this 4T oil in his two-wheeler.

C. Advice by a friend who is more knowledgeable than me in this field.

D. Advice of experts on websites, blogs, social network.

E. Advice by my mechanic.

F. Advice of shop salesperson.

The questionnaire attempted to come across as instructive and encouraging throughout the four pages. It closed by thanking the respondent for the time and effort devoted for the survey and offered an invitation to participate in Lucky Draw based on the questionnaire serial numbers to be sent by text message to the given mobile phone number of the researcher, There was a check box at the end to record whether the respondent had sent the sent text message and there was a separate box for signature by the respondent, as administrative questions. The questionnaire is given in Appendix – II.

The scale items were tested for reliability exceeded the minimum requirement 0.70 (Bagozzi, 1994), as given in Table 4.5.

Table 4.5 Scale Reliability

Construct	Cronbach's alpha score
Involvement	0.736
Awareness	0.801
Customer Innovativeness	0.776
Opinion Leadership	0.737
Market Mavenism	0.740
Two-wheeler Enthusiasm	0.719
Value for Money Perception	0.756

4.4.2 FINAL SURVEY QUESTIONNAIRE FOR USERS

Based on the experience gathered during pilot survey and on completion of analysis of data obtained from the pilot study, the pilot survey questionnaire was improved to collect data during the final survey with highest factual accuracy. The component questions of the final survey questionnaire for users are given in Table 4.6 below:

Table 4.6 Sections of Final Survey Questionnaire for Users

Category of Questions	Question numbers	Total Questions	Percentage of Questions
Administrative	i, ii, iii, 29, iv, v	6	10%
Classification	30 to 36 (includes sub questions)	11	18%
Target	1 to 28 (includes sub questions)	44	72%
Total		61	100%

The need for change and the changes made in the questionnaire are summarised below:

1. The overall length of the questionnaire was reduced by one page of A4 sized paper, from the earlier 4 page questionnaire to a 3 page final questionnaire. It was observed during the pilot survey that many survey elements who initially expressed willingness to respond, withdrew the moment they saw a four page questionnaire, citing lack of time. Many respondents displayed signs of fatigue, disconnect and disinterest at some point in time during the course of their response to such a lengthy questionnaire, Further as respondent were intercepted in the marketplace and not in the comfort of their

homes, they wanted to get over with the task hurriedly. Such an adverse perceived situation is not expected to elicit true factual, unbiased responses from sample elements. Hence the total numbers of questions were reduced to make the questionnaire appear as less bothersome to respondents. Certain dimensions of constructs were eliminated as they were overlapping with dimensions of other constructs and care was taken to ensure that validity of the construct was not sacrificed in the process.

2. Certain wordings were changed as a many respondents did not understand them. Hence the word “bother”, used in one item was replaced by the word “care”. The questionnaire was thus modified to ensure usage of lucid words of English language, which are more commonly used and better understood in India.

3. The formats of questions to ascertain brand loyalty were changed to match with the format of other items in the questionnaire, where response was sought in a five point Likert scale. This was done as some respondents were unsure as to how their response is to be marked in the questionnaire. This ensured that any such ambiguity was removed from the final questionnaire.

There was no change in the administrative and classification questions. The two primary factor questions were also retained unchanged as question numbers 1 and 2. The target questions were reduced and some were reworded or reformatted.

The constructs for which the scale items were reduced and changed are as follows:

The number of scale items in the construct of Two-Wheeler Enthusiasm was reduced from 7 to 2, as question numbers 3 and 4 as follows:

3. I am emotionally very attached to my two-wheeler motor vehicle.
4. I derive great pleasure in going on long trips, riding my two-wheeler motor vehicle.

The involvement construct was reduced from 6 scale items to 3 items in question numbers 5 to 7, as follows:

5. I do not care which particular 4T engine oil is put in my two-wheeler by my mechanic. “negative”
6. I am very particular about which 4T oil to use in my two-wheeler.
7. I buy whichever 4T oil for my two wheeler, which my mechanic or lubricants shop salesperson advises. “negative”

The construct of awareness of product category and awareness of availability were reduced to one item each as given in question numbers 8 and 9 respectively as follows:

8. Till today, I was not aware of the new type of oil for two-wheelers called synthetic 4T oil. “negative”
9. I do not remember having seen synthetic 4T oils displayed in any local shop or petrol pump. “negative”

The question for interest was retained in the original manner, as question number 10, since it was clear, brief and served the purpose.

The 4 scale items for the next construct - awareness of benefits were also retained in their original form as question numbers 11 to 14.

The wording for the item on price sensitivity was changed, in order to better acknowledge the awareness of higher price and properly reflect the informed choice to opt for the same. The item was included as question number 15 and framed as follows:

15. I don't mind paying more to purchase newly launched synthetic 4T oils which are more expensive than normal 4T oils,

The construct of Value for Money was measured by only 1 item in question number 16, instead of 3 items in the pilot survey, as follows:

16. I think that as oil change period for synthetic oils is far more than normal engine oils, I get an overall cost benefit advantage over a longer period of time by usage of synthetic lubricants.

For the next three constructs of consumer innovativeness, market mavenism and opinion leadership, the order of questions were changed to hold attention of the respondent. The total number of items measuring opinion leadership was reduced from 4 to 2. The questions started with scale items for consumer innovativeness, in question numbers 17 and 18 as follows:

17. I greatly enjoy being the first in my social circle to buy new technology products.

18. I enjoy taking calculated risks in buying new technology products.

Market mavenism was measured through question numbers 19 and 20 as follows:

19. My friends consider me to be a good source of information on new products, shops or workshops regarding maintenance and care of two-wheelers.

20. I enjoy providing information to my friends about new brands and different kinds of products.

Opinion leadership was measured by question numbers 21 and 22 as follows:

21. I often try to convince my friends to use the engine oil that I like, for their two-wheeler.

22. My friends value my advice on choosing which engine oil to use in their two-wheeler.

Customer satisfaction and brand loyalty were measured by the next 3 questions. The numbers of items to measure loyalty were reduced from 3 items to 2 items. As satisfaction is a prerequisite for loyalty, the item to measure satisfaction was negatively worded and sandwiched between two items to measure loyalty. The item for customer satisfaction in question number 24 was as follows:

24. I am not satisfied with the 4T oil I am using for my two-wheeler.
“negative”

The items to measure loyalty by question numbers 23 and 25 were as follows:

23. I have used the same brand and type of 4T oil several times earlier.

25. As I like the brand and type of 4T oil I am now using, I will continue to use the same for my two-wheeler.

Thereafter there no changes were made to the rest of the items to measure variables as follows:

Question numbers 26A to 26H to measure influence of advertisement,

Question numbers 27A to 27E to measure influence of below the line promotions and

Question numbers 28A to 28F to measure social influence.

The concluding sections of the questionnaire retained the same expression of gratitude and invitation to participate in luck draw to in surprise gifts. The questionnaire is given in Appendix – III.

Reliability of scale items was tested by Cronbach's alpha test. The scores obtained for each construct exceeded the minimum requirement 0.70 (Bagozzi, 1994), as given in Table 4.7 below.

Table 4.7 Scale reliability

Construct	Cronbach's alpha score
Customer Innovativeness	0.863
Opinion Leadership	0.809
Market Mavenism	0.839
Two-wheeler Enthusiasm	0.716

4.4.3 FINAL SURVEY QUESTIONNAIRE FOR MECHANICS

The survey instrument used was a well-structured questionnaire prepared by the researcher, different from that for users of two-wheelers consisting of separate sections for three categories of questions: administrative questions, classification questions and target questions as given in Table 4.8 below:

Table 4.8 Sections of Final Survey Questionnaire for Mechanics

Category of Questions	Question numbers	Total Questions	Percentage of Questions
Administrative	i, ii, iii, 18, 19, 20, 23, iv, v	9	8%
Classification	21, 22	2	14%
Target	1 to 17 (includes sub questions)	38	78%
Total		76	100%

Administrative questions comprised of serial number of the questionnaire, survey location and the survey date and time to be incorporated in three blank cells on the top right corner in the first page of the questionnaire. The respondent's name and signature were sought at the top and bottom respectively, in the last page of the questionnaire.

Classification questions were included in the last page of the questionnaire. These constituted question numbers 21 to 22 and comprised of demographic characteristics of the respondents.

Further demographic characteristics like marital status and gender were not sought as they had no relevance to the study. Marital status is not expected to play any role in influence and gender is irrelevant as 100% of mechanics in

independent workshops are male. Occupation was not sought as the respondents constituted a convenience sample of full time two-wheeler mechanics. Educational qualification was not sought as only those mechanics who had obtained training at Industrial Training Institutes were chosen as respondents.

Unlike in the case of questionnaire for users in the previous section 5.4.2., mobile phone number of respondents was sought as mechanics willingly share their mobile phone numbers with their customers and any prospective customer at large in order to entice business for themselves, without the hesitation of the possibility of unwanted sales calls.

Target questions formed the bulk and body of the questionnaire. These questions were developed out of a series of in-depth pilot study discussions with 6 acclaimed and popular two-wheeler vehicle mechanics purposefully selected by the researcher, covering their interests, attitudes, commercial considerations, support by lubricants marketers and buying behaviour of their customers, in order to unearth factors and motives influencing mechanics. These questions were structured and investigative, grouped into topics to address the research objectives. Each grouped section started with explicit instructions on how to respond to the constituent questions in the group. The questions sought responses using a five point Likert scale with “1” indicating “Strongly Disagree” and “5” indicating “Strongly Agree”.

The questionnaire started with seeking declaration of the primary factor viz. recommendation of synthetic lubricants or mineral based lubricants and the brand of lubricant in question number 1A and 1B respectively. This primary factor is of the most vital importance as this research study attempts to find and measure the difference in constructs, variables and characteristics of sample elements based on this factor. Brand of lubricant has been sought for reporting descriptive statistics only and not to test any hypothesis.

Thereafter, the questions were grouped into items representing individual dimensions of the constructs being tested. Each construct included multiple dimensions. Standard scales on marketing and consumer behaviour existing in literature, created, tested and perfected by past researchers were referred to but not used to the full extent for reasons detailed in a previous section.

The target questions, grouped to represent dimensions of a construct, are detailed below:

The first set of target questions comprised 2 questions, to assess the broad level advice sought and influence exerted by mechanics on their customers with regard to the purchase and usage of the type and brand of lubricant, through question numbers 2 and 3 as follows:

2. I normally advise all my customers which 4T oil they should use in their two-wheeler.

3. My customers often do not take my advice and decide the brand of 4T oil to use in their Two-wheeler. “negative”

Broad level advice sought and influence exerted by lubricants shop salesperson was assessed next by question number 4 as follows:

4. My customers take advice of the lubricants shop salesperson on choosing the brand of 4T engine oil.

The above three questions were placed at the beginning of the questionnaire in order to attract interest of the respondents and to set the pace to progress towards more in-depth questions.

Awareness of the product category was tested next by question number 5 as follows:

5. Till today, I was not aware that synthetic 4T oils for two-wheelers are available in the local market.

The next logical progress from awareness being the extent of interest and knowledge about the product category, the construct of knowledge included 4 scale items in question numbers 6 to 9 as follows:

6. I wish to know more about benefits of using synthetic 4T engine oils
7. I think synthetic 4T oils give better protection to the engine of two-wheelers than normal 4T oils.
8. I think synthetic 4T oils improve engine performance of two-wheelers.

9. I feel oil change period for synthetic 4T oils in two-wheelers is much more than normal 4T oils.

Commercial consideration was the next construct, assessed by 3 scale items in question numbers 10 to 12 as follows:

10. I feel that there will be loss of my income by advising customers to use synthetic 4T oils, as these customers will need to visit my workshop less frequently.

11. I feel that there will be increase of my income by advising customers to use synthetic 4T oils, as more customers will visit to my workshop.

12. Using synthetic 4T oils instead of normal 4T oils is a waste of money as I feel that synthetic 4T oils do not provide more benefits than normal 4T oils.

The construct of domain specific opinion leadership of the respondents was measured by the next set of 2 scale items in question numbers 13 and 14 as follows:

13. When I discuss about two-wheelers with other mechanics, I give them more information than what they give me.

14. I often try to convince other mechanics to use the brand of engine oil for two-wheeler motor vehicle of my choice.

It is hypothesized that two-wheeler mechanics are themselves influence by both above the line and below the line promotions of lubricants marketers and are also subjected to influence by social influencers. These influences are measured through the next 3 sets of questions.

The influence of various modes of advertisement was covered in the set of 8 questions with numbers 15A to 15G.

15. I have chosen to recommend the Type and Brand of 4T oil mainly due to:

- A. Attractive display in shops
- B. Attractive posters in shops
- C. Hoardings on roadside
- D. Advertisements in newspapers
- E. Advertisements in magazines
- F. Advertisements on FM radio
- G. Advertisements on TV
- H. Advertisements on websites

Question numbers 16A to 16J were 9 questions on different means of below the line sales promotion activities of marketers as follows:

31. I have chosen to recommend the Type and Brand of 4T oil due to the following activities by the Lubes company:

- A. Sales Campaign at petrol pumps
- B. Sales Campaign at lubricant shops
- C. Sales Campaign at our workshop
- D. Good incentive schemes - free gifts
- E. Good incentive schemes - free tours
- F. Good incentive schemes - lucky draw.
- G. Training Programmes
- H. Signboard, wall/shutter painting, uniform
- I. Agreement - Loyalty scheme

The last set of 2 questions in question numbers 17A to 17B covered the influence of social influencers as follows:

17. I have chosen to recommend the Type and Brand of 4T oil mainly due to:

- A. Advice of expert mechanics
- B. Advice of company/distributor/shop salesperson.

The questionnaire attempted to be lucid and instructive throughout the three pages. It closed by thanking the respondent for the time and effort that they had devoted for the survey and offered an invitation to participate in Lucky Draw based on the questionnaire serial numbers to be sent by text message to the given mobile phone number of the researcher, to win surprise gifts. There was a check box at the end of the questionnaire to record whether the respondent had sent the text message and there was a separate box at the end for personalizing the response by putting signature by the respondent.

The questionnaire is given in Appendix – IV.

4.4.4 FINAL SURVEY FOR AUTHORIZED SERVICE STATIONS

The research instrument was a quick structured interview, on the basis of a prepared list of succinct questions as follows:

1. Do any of their customers insist on using lubricants of their choice?
2. Do they offer choice of lubricants to all their customers?
3. Do they sell any lubricant other than the company approved or company co-branded lubricant?

The data gathered was qualitative and the same is reproduced below.

The two-wheeler manufacturing companies ensure that all authorised service stations follow their directives on service processes and standards, including usage of company-approved genuine oils or co-branded lubricants only. All such genuine oils have now been upgraded to synthetic lubricants.

As use of lubricants other than that approved or co-branded by the company is strictly prohibited, authorized service stations therefore use the stipulated lubricants only and offer no choice of lubricants to their customers. Customers are aware of the fact and very few customers insist on using a brand or type of lubricant of their choice.

Whereas officially none of these service stations accepted usage of lubricants other than the approved brand and type, on further probing tactfully with the assurance of keeping the information strictly private, a small number of them accepted usage of spare parts and lubricants other than those approved by the vehicle manufacturing company, citing instances of stock outs and such other exigencies. However the data was unverified and not usable.

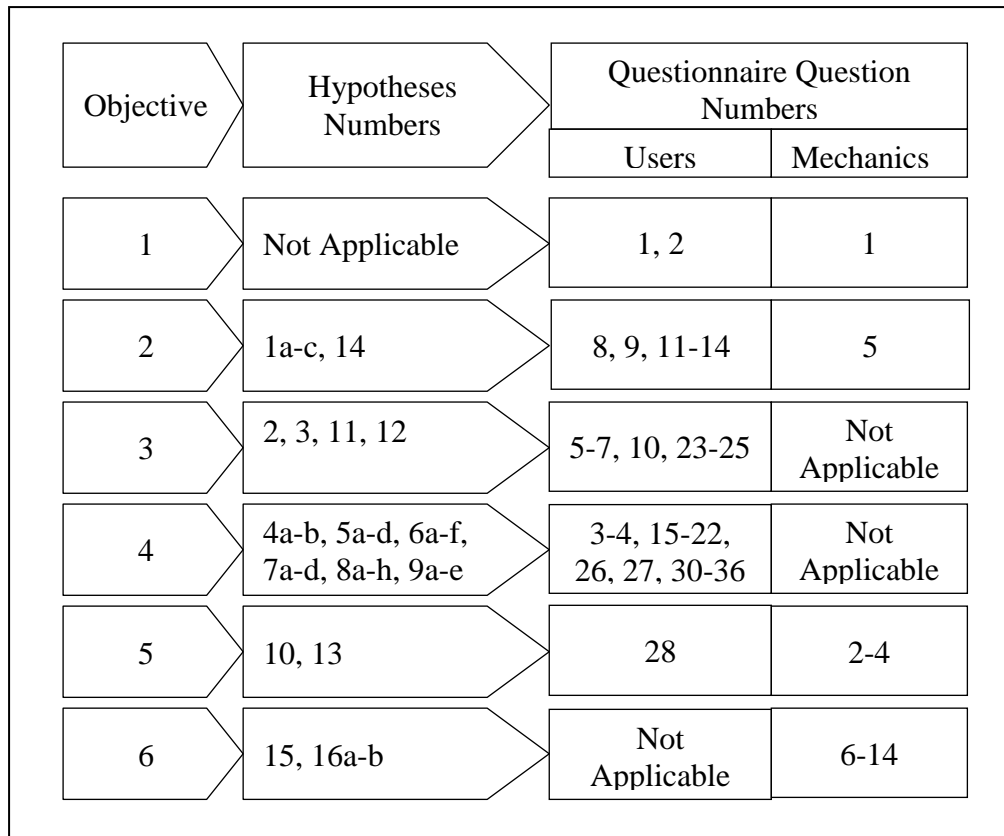
The gist of the interviews is that at authorized service stations synthetic lubricants are used and customers cannot exercise their choice of lubricant.

4.5 RESEARCH FLOW

The research followed a systematic flow of sequence of analytical and field survey work. The research objectives were formulated and an exhaustive review of literature to study past research work in the domain to understand their findings, limitations, gaps and directions for further research. Thereafter hypotheses were formed and research methodology was finalized, including development of two research instruments in terms of structured questionnaires. While the stages of data collection, analysis and conclusions are dealt with in later sections, in the current section, the linkage between objectives,

hypotheses and final survey questionnaires are shown as Research Flow in Figure 4.1 below:

Figure 4.1 Research Flow



CHAPTER 5: DATA ANALYSIS

CHAPTER 5: DATA ANALYSIS

The primary data collected during the pilot survey and the final survey, through questionnaires, was edited, coded and analyzed using IBM SPSS 22.0 software. Pilot survey data analysis is presented very briefly, thereafter detailed analysis of the final survey data is provided.

5.1 PILOT SURVEY DATA ANALYSIS

The demographic profile of respondents and scale assessment of the constructs are presented in brief in the following sections.

5.1.1 DEMOGRAPHIC PROFILE OF RESPONDENTS

The descriptive cross tabulation of demographic variables and vehicle characteristics with usage of synthetic lubricants or normal mineral based lubricants as given in Tables 5.1 to 5.9 below, followed by their interpretation.

5.1.1.1 VARIABLE: GENDER

Table 5.1 Descriptive Cross Tabulation of Gender

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Gender	Male	32	174	206
	Female	1	18	19
	Transgender	0	0	0
	Total	33	192	225

Interpretation:

Males constituted 92% of respondents, while 8% were females. There were no transgender. Only 14.67% used synthetic lubricants, 97% of them were male.

It is evident that adoption rates are dismal in general and more so in case of females, indicating huge unexploited opportunity in engaging female users.

5.1.1.2 VARIABLE: AGE

Table 5.2 Descriptive Cross Tabulation of Age

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Age	Less than 25 years	9	44	53
	25 years to less than 35 years	19	94	113
	35 years to less than 45 years	5	37	42
	45 years and above	0	17	17
	Total	33	192	225

Interpretation:

A majority of 50% of the respondents were in the age group of 25 years to less than 35 years, while they constituted the major 57.57% of synthetic lubricant users. The younger age group of less than 25 years constituted the 23.55% of respondents while they were 27.27% of synthetic lubricants users. This indicates that the younger population is a higher user of synthetic lubricants and the older population provides scope for further adoption.

5.1.1.3 VARIABLE: MARITAL STATUS

Table 5.3 Descriptive Cross Tabulation of Marital Status

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Marital Status	Single	16	90	106
	Married	17	102	119
	Total	33	192	225

Interpretation:

Respondents were almost equally divided amongst in marital status, with single at 47% and married at 53% and constituted similar share of synthetic lubricants users with single being 48% and married being 52% of users, indicating that marital status had no influence on adoption rates.

5.1.1.4 VARIABLE: OCCUPATION

Table 5.4 Descriptive Cross Tabulation of Occupation

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Occupation	Student	6	28	34
	Service	18	145	163
	Self-employed – professional	5	5	10
	Self-employed – business	4	14	18
	Total	33	192	225

Interpretation:

A very large majority of 72% of the respondents had service as their occupation while students comprised the next big group at 15%. The users of synthetic lubricants showed disparity in composition with only 55% of users of synthetic lubricants being service holders while 18% of them being students. The highest adoption level was displayed by self employed professionals, where 50% of them used synthetic lubricants, followed by self employed businesspersons at 22%. This indicates superior perception of value for money by self employed people and scope for engaging with others.

5.1.1.5 VARIABLE: EDUCATION

Table 5.5 Descriptive Cross Tabulation of Education

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Education	Under Graduate	5	54	59
	Graduate	11	107	118
	Post Graduate and above.	17	31	48
	Total	33	192	225

Interpretation:

Graduates constituted 52.4% of the respondents followed by under graduates at 26.2% and post graduates at 21.3%, but 35% of the post graduates were users of synthetic lubricants. This indicates opportunity for educating other segments of the population.

5.1.1.6 VARIABLE: INCOME

Table 5.6 Descriptive Cross Tabulation of Income

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Monthly take home income (in Rupees)	Less than 15,000/-	3	22	25
	15,000/- to less than 30,000/-	10	98	108
	30,000/- to less than 50,000/-	4	58	62
	50,000/- to less than 75,000/-	7	10	17
	More than 75,000/-	9	4	13
	Total		33	192

Interpretation:

The largest group was 15000 to less than 30000, with 48% of respondents. The largest percentage of users of synthetic lubricants were in the higher income

groups, where the above 75000 segment had 69% of them as users followed by 50000 to less than 75000 had 41% of them as users. This indicates that there is a lot of scope in educating the target population on the concept for greater value for money in adoption and usage of synthetic lubricants, inspite of their higher initial purchase price through their superior performance lasting for longer periods before their need for replacement.

5.1.1.7 VARIABLE: TWO-WHEELER CATEGORY

Table 5.7 Descriptive Cross Tabulation of Two-wheeler Category

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Two-wheeler Category	Motorcycle	32	143	175
	Scooter	1	49	50
	Moped	0	0	0
	Total	33	192	225

Interpretation:

Motorcycles constituted an overwhelming 78% of the category of two-wheelers of respondents and scooters constituted a distant 22%, whereas none of the respondents used mopeds. Almost all the users of synthetic lubricants were motorcycle users at 97%, while scooter user constituted only 3%. As scooter sales growth is highest amongst two-wheelers, it is imperative that marketers take up the challenge of engaging increasingly with scooter users to ensure rapid adoption of synthetic lubricants. This is also pertinent as the spate of recently launched scooters sport latest generation high technology engines which require synthetic lubricants for continued peak performance.

5.1.1.8 VARIABLE: TWO-WHEELER AGE

Table 5.8 Descriptive Cross Tabulation of Two-wheeler Age

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Two-wheeler Age	Less than 2 years	14	15	29
	2 years to less than 5 years	15	141	156
	5 years to less than 8 years	0	0	0
	8 years and above	4	36	40
	Total	33	192	225

Interpretation:

An overwhelming 69% of respondents had somewhat new two-wheelers in the vehicle age group of 2 years to less than 5 years old. The two groups of newer two-wheelers of age less than 2 years as well as 2 year to less than 5 years constituted a total of 88%, with almost equal participation from each group. This indicates that users of newer two-wheelers are more concerned about the care and performance of their vehicle, whereas owners of older vehicles provide greater opportunity of engagement by marketers as their older vehicles require more frequent maintenance.

5.1.1.9 VARIABLE: ENGINE CUBIC CAPACITY

Table 5.9 Descriptive Cross Tabulation of Engine Cubic Capacity

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Two-wheeler engine cc	Less than 125 cc	7	155	162
	125 cc to less than 175 cc	17	34	51
	175 cc to less than 250 cc	6	3	9
	250 cc or more	3	0	3
	Total	33	192	225

Interpretation:

A vast majority of 72% of respondents used two-wheelers having engines of cubic capacity of less than 125cc while a mere 23% of them used those of the next higher segment of cubic capacity from 125cc to less than 175cc. The highest users of synthetic lubricants were those with higher capacity vehicles, as amongst the 250cc or more segment 100% of them used synthetic lubricants, followed by the 175cc to less than 250cc, with 67% and the segment 125cc to less than 175cc with 33%. This provides scope to marketers to promote synthetic lubricants amongst lower capacity two-wheelers, which have a much larger vehicle population and hence a greater opportunity to ramp up adoption by proper targeting of appropriate marketing communications.

A summary of interpretation of analysis of pilot survey data is that adoption levels are low and skewed in terms of adoption by an early adopter population characterized by young males in higher income groups, having post graduate education using newer and higher capacity motorcycles. Thus there exists an immense untapped market potential.

The above implies that lubricants marketing companies have a great opportunity of a large dormant market. Marketers need to catch the attention of customers to increase their awareness about the new product category and educate them on concepts of enhanced value for money in usage of synthetic lubricants, so as to effectively promote the new product category.

5.1.2 SCALE ASSESSMENT

The descriptive statistics of the 7 consumer behaviour constructs measured by multi item scales developed for this pilot study are given in Table 5.10 below.

Table 5.10 Descriptive Statistics of Constructs

Construct	Mean	Standard Deviation	Skewness	Kurtosis
Awareness	2.604	0.899	.711	.564
Involvement	3.036	0.689	.209	-1.068
Value for Money Perception	3.434	0.816	-.604	-.650
Customer Innovativeness	3.240	0.861	-.378	-.987
Opinion Leadership	2.843	0.808	.384	-.202
Market Mavenism	3.484	0.682	-.263	-.068
Two-wheeler Enthusiasm	3.440	0.568	-.104	.063

Reliability of scale items was tested by Cronbach's alpha test. The scores obtained for each construct exceeded the minimum requirement 0.70 (Bagozzi, 1994), as given in Table 5.11 below.

Table 5.11 Scale Reliability

Construct	Cronbach's alpha score
Awareness	0.801
Involvement	0.736
Value for Money Perception	0.756
Customer Innovativeness	0.776
Opinion Leadership	0.737
Market Mavenism	0.740
Two-wheeler Enthusiasm	0.719

The above results conveyed adequate reliability of scales and paved the way forward to proceed with final survey.

5.2 DATA ANALYSIS OF FINAL SURVEY

The final survey was carried out on 3 sets of target population, the first being users, the second being mechanics of independent workshops, while the third set was owners of authorized service stations. Quantitative analysis was performed on the data collected from respondents of the first two sets. Data collected from the third set was qualitative in nature and hence not analyzed.

The demographic profile of respondents, scale assessment of the constructs, hypotheses tests and factor analysis alongwith interpretation of results are presented in detail, in the following sections.

5.2.1 DEMOGRAPHIC PROFILE OF RESPONDENTS: USERS

The descriptive cross tabulation of demographic variables and vehicle characteristics with usage of synthetic lubricants or normal mineral based lubricants of the first set of respondents are given in Tables 5.12 to 5.21 below, followed by their interpretation.

5.2.1.1 VARIABLE: GENDER

Table 5.12 Descriptive Cross Tabulation of Gender

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Gender	Male	67	318	385
	Female	1	14	15
	Transgender	0	0	0
	Total	68	332	400

Interpretation:

Males constituted 96% of respondents, while 4% were females. There were no transgender respondents. Only 17% used synthetic lubricants, 98.53% of them being male. It is evident that adoption rates are low in general and much more pronounced in case of females, indicating the existence of a huge untapped market. Lubricants marketers have a good opportunity to exploit the vast market to ramp up adoption.

5.2.1.2 VARIABLE: AGE**Table 5.13 Descriptive Cross Tabulation of Age**

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Age	Less than 25 years	23	138	161
	25 years to less than 35 years	22	112	134
	35 years to less than 45 years	13	59	72
	45 years and above	10	23	33
	Total	68	332	400

Interpretation:

A majority of the respondents were young, 40% being in the age group of less than 25 years and 34% in the age group of 25 years to less than 35 years, while clubbed together they constituted the major 66% of synthetic lubricant users. The highest usage of synthetic lubricants, at over 30%, was noted in the age group of 45 years and above, while it ranged from 14% to 18% in the other three age groups. As usage of synthetic lubricants is more amongst the older population, it indicates that the large young population remains untapped.

5.2.1.3 VARIABLE: MARITAL STATUS

Table 5.14 Descriptive Cross Tabulation of Marital Status

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Marital Status	Single	27	153	180
	Married	41	179	220
	Total	68	332	400

Interpretation:

Respondents were almost equally divided amongst in marital status, with single at 45% and married at 55%. Synthetic lubricants usage was marginally higher amongst married respondents at 18.64%, while that amongst single respondents was 15%, indicating that married respondents had taken better informed decisions by adopting synthetic lubricants.

5.2.1.4 VARIABLE: OCCUPATION

Table 5.15 Descriptive Cross Tabulation of Occupation

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Occupation	Student	20	95	115
	Service	17	136	153
	Self-employed – professional	12	32	44
	Self-employed – business	19	69	88
	Total	68	332	400

Interpretation:

The largest segment of respondents by occupation was service at 38%, closed followed by students at 29% and self-employed business persons at 22%. Adoption rates of synthetic lubricants was highest at 27% amongst self-

employed professionals, followed by self employed business persons, students stood the next at 17%, whereas the least adoption was exhibited by service persons. This indicates superior perception of value for money by self employed people, who turned out to be early adopters. This also indicates that there exists scope for marketers to promote synthetic lubricants amongst the target customers in other occupations.

5.2.1.5 VARIABLE: EDUCATION

Table 5.16 Descriptive Cross Tabulation of Education

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Education	Under Graduate	29	138	167
	Graduate	31	168	199
	Post Graduate and above.	8	26	34
	Total	68	332	400

Interpretation:

Graduates constituted 50% of the respondents followed by under graduates at 42% and post graduates at 9%, but 24% of the post graduates were users of synthetic lubricants, followed by 17% of undergraduates and 16% of graduates. This indicates disparity in adoption rates based on education, as respondents with higher education levels appear to have understood the benefits in usage of superior performing products. Lubricants marketing companies therefore have an opportunity to engage with potential customers who are not very well educated and enhance their knowledge about the product category to foster greater adoption.

5.2.1.6 VARIABLE: INCOME

Table 5.17 Descriptive Cross Tabulation of Income

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Monthly take home income (in Rupees)	Less than 15,000/-	12	45	57
	15,000/- to less than 30,000/-	19	96	115
	30,000/- to less than 50,000/-	15	102	117
	50,000/- to less than 75,000/-	15	51	66
	More than 75,000/-	7	38	45
	Total	68	332	400

Interpretation:

The largest groups of respondents were the two income groups of Rupees 15000 to less than 30000 and Rupees 30000 to less than 50000, with 29% in each group. The largest percentage of users of synthetic lubricants were in the income group of Rupees 50000 to less than 75000, with 23% followed by less than 15000, with 21%. This indicates scope in educating the target population on the concept for greater value for money in adoption of synthetic lubricants, inspite of their higher price as they last for longer periods.

5.2.1.7 VARIABLE: TWO-WHEELER CATEGORY

Table 5.18 Descriptive Cross Tabulation of Two-wheeler Category

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Two-wheeler Category	Motorcycle	63	263	326
	Scooter	3	43	46
	Moped	2	26	28
	Total	68	332	400

Interpretation:

Motorcycles constituted an overwhelming 82% of the category of two-wheelers of respondents while scooters and mopeds constituted a distant 12% and 7% respectively. Usage of synthetic lubricants was 19% amongst respondents with motorcycles, while it was just 7% in case of both scooters and moped. As the sales volume of scooter segment is currently witnessing the highest growth rates amongst two-wheelers, it is imperative that marketers take up the challenge of engaging increasingly with scooter users to ensure rapid adoption of synthetic lubricants. This is also pertinent as the spate of recently launched scooters sport latest generation high technology engines which require synthetic lubricants for continued peak performance.

5.2.1.8 VARIABLE: TWO-WHEELER MAKE

Table 5.19 Descriptive Cross Tabulation of Two-wheeler Make

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Two-wheeler Make	Bajaj	20	61	81
	Hero	8	35	43
	Hero Honda	11	88	99
	Honda	15	68	83
	Kawasaki	0	3	3
	Kinetic	0	1	1
	Mahindra	0	1	1
	Piaggio	1	2	3
	Rajdoot	0	1	1
	Enfield	5	11	16
	Suzuki	1	7	8
	TVS	3	34	37
	Yamaha	4	20	24
Total		68	332	400

Interpretation:

Four brands of two-wheelers, namely Hero Honda, Honda, Bajaj and Hero made up 77% of all the respondents. Piaggio, Enfield and Bajaj were the brands where the highest adoption rates of 33%, 31% and 25% respectively, were observed. This indicates that users of renowned brands two-wheelers are concerned about the care and performance of their vehicle. This provides opportunity to lubricants marketers to impress upon vehicle manufacturers to promote synthetic lubricants usage by their customers for ensuring better maintenance of their vehicle.

5.2.1.9 VARIABLE: TWO-WHEELER AGE

Table 5.20 Descriptive Cross Tabulation of Two-wheeler Age

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Two-wheeler Age	Less than 2 years	38	90	128
	2 years to less than 5 years	20	112	132
	5 years to less than 8 years	4	86	90
	8 years and above	6	44	50
	Total	68	332	400

Interpretation:

An overwhelming 65% of respondents had somewhat new two-wheelers in the two groups of two-wheelers of age less than 2 years as well as 2 year to less than 5 years. Adoption of synthetic lubricants was highest in the vehicle age group of less than 2 years, at 30%. This indicates that users of newer two-wheelers are more concerned about the care and performance of their vehicle, whereas owners of older vehicles provide greater opportunity of engagement by marketers as their older vehicles require more frequent maintenance.

5.2.1.10 VARIABLE: ENGINE CUBIC CAPACITY

Table 5.21 Descriptive Cross Tabulation of Engine Cubic Capacity

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Two-wheeler engine cc	Less than 125 cc	24	186	210
	125 cc to less than 175 cc	28	117	145
	175 cc to less than 250 cc	10	15	25
	250 cc to less than 500 cc	6	12	18
	500 cc and above	0	2	2
	Total	68	332	400

Interpretation:

A large majority of 53% of respondents used two-wheelers having engines of cubic capacity of less than 125cc while 36% of them used those of the next higher segment of cubic capacity from 125cc to less than 175cc. The segment of 175cc to less than 250cc had the highest users of synthetic lubricants amongst them at 40%, followed by the 250cc to less than 500cc at 33%. This provides scope to marketers to promote synthetic lubricants amongst lower capacity two-wheelers, which have a much larger vehicle population and hence a greater opportunity to ramp up adoption by proper targeting of appropriate marketing communications.

A summary of analysis of demographic profile of respondents is that adoption levels are low and there exists an immense untapped market potential. Lubricants marketing companies have a great opportunity to catch the attention of customers so as to effectively promote the new product category.

5.2.2 SCALE ASSESSMENT: USERS

The descriptive statistics of the 7 consumer behaviour constructs measured by multi item scales developed for this study are given in Table 5.22 below.

Table 5.22 Descriptive Statistics of Constructs

Construct	Mean	Standard Deviation	Skewness	Kurtosis
Awareness	3.404	0.662	.054	-.387
Involvement	3.150	0.762	-.058	-.182
Value for Money Perception	3.443	0.966	-.196	-.461
Customer Innovativeness	2.829	1.060	.185	-.702
Opinion Leadership	3.071	0.969	.045	-.740
Market Mavenism	3.150	0.950	-.101	-.661
Two-wheeler Enthusiasm	3.487	1.030	-.355	-.521

Reliability of scale items was tested by Cronbach's alpha test. The scores obtained for each construct exceeded the minimum requirement 0.70 (Bagozzi, 1994), as given in Table 5.23 below.

Table 5.23 Scale Reliability

Construct	Cronbach's alpha score
Awareness	0.808
Involvement	0.771
Value for Money Perception	0.782
Customer Innovativeness	0.863
Opinion Leadership	0.809
Market Mavenism	0.839
Two-wheeler Enthusiasm	0.776

The above constructs were tested for correlation. Significant correlations were found, indicating existence of overlapping dimensions, as given in Table 5.24.

Table 5.24 Correlation of Constructs

		AWA	INV	VFM	CI	OL	MM	TWE
AWA	Cor	1	.307**	.342**	.238**	.158**	.141**	.337**
	Sig.		0	0	0	0.002	0.005	0
	N	400	400	400	400	400	400	400
INV	Cor	.307**	1	.240**	0.091	.241**	.111*	.293**
	Sig.	0		0	0.07	0	0.027	0
	N	400	400	400	400	400	400	400
VFM	Cor	.342**	.240**	1	.148**	.172**	.154**	.277**
	Sig.	0	0		0.163	0	0.059	0
	N	400	400	400	400	400	400	400
CI	Cor	.238**	0.091	.148**	1	.173**	.535**	.330**
	Sig.	0	0.07	0.163		0.001	0	0
	N	400	400	400	400	400	400	400
OL	Cor	.158**	.241**	.172**	.173**	1	.319**	.269**
	Sig.	0.002	0	0	0.001		0	0
	N	400	400	400	400	400	400	400
MM	Cor	.141**	.111*	.154**	.535**	.319**	1	.301**
	Sig.	0.005	0.027	0.059	0	0		0
	N	400	400	400	400	400	400	400
TWE	Cor	.337**	.293**	.277**	.330**	.269**	.301**	1
	Sig.	0	0	0	0	0	0	
	N	400	400	400	400	400	400	400

****.** Correlation is significant at the 0.01 level (2-tailed).

*****. Correlation is significant at the 0.05 level (2-tailed).

The abbreviations used in the above table are as follows:

AWA= Awareness, INV= Involvement, VFM= Value for Money, CI= Customer Innovativeness, OL= Opinion Leadership, MM= Market Mavenism, TWE= Two-wheeler Enthusiasm, Cor= Pearson Correlation and Sig.= Significance (2-tailed).

5.2.3 DEMOGRAPHIC PROFILE OF RESPONDENTS:MECHANICS

The descriptive cross tabulation of demographic profile of the respondents with recommendation of lubricant type is given in Table 5.25 below.

Table 5.25 Descriptive Cross Tabulation of Demographic Profile

Variable	Description	Synthetic Lubricants	Mineral oil based Lubricants	Total
Gender	Male	22	33	55
	Female	0	0	0
	Transgender	0	0	0
	Total	22	33	55
Age in years	Less than 25	2	6	8
	25 to less than 35	4	17	21
	35 to less than 45	5	6	11
	45 and above	11	4	15
	Total	22	33	55
Experience in years	Less than 1	0	1	1
	1 to less than 5	3	6	9
	5 to less than 10	2	4	6
	10 and above	17	22	39
	Total	22	33	55
Number of two-wheelers serviced per month	Less than 150	7	11	18
	150 to less than 300	8	11	19
	300 to less than 450	5	5	10
	450 and above	2	6	8
	Total	22	33	55

Interpretation:

All the 55 respondents were male. There were no female or transgender. 40% of the respondents recommended usage of synthetic lubricants. The age profile was broadly distributed, the segment of 25 years to less than 35 years was the largest at 38%. Recommendation of usage of synthetic lubricants was highest

amongst the senior age groups as 73% of those 45 years and above and 45% of those in the age group of 35 years to less than 45 years recommended it usage. 75% of the respondents were in the experience of 10 years and above segment. In this segment, 44% of the respondents recommended synthetic lubricants, which was the largest. In terms of the business volume of the workshops of the respondents, the 2 lower volume segments covered 68% of respondents. Recommendation of synthetic lubricants was lowest in the largest workshop at 25% and ranged from 39% to 50% in case of smaller workshops.

The descriptive cross tabulation of recommendation profile of respondents with respect to the brand and type of lubricants generally recommended by them to their customers is given in Table 5.26 below:

Table 5.26 Descriptive Cross Tabulation of Lubricant Recommendation

Brand	Synthetic Lubricants	Mineral oil based Lubricants	Total
Servo	2	4	6
HP	0	1	1
MAK	6	8	14
Veedol	2	2	4
Gulf	1	1	2
Castrol	8	10	18
Mobil	0	0	0
Shell	1	3	4
Elf	1	0	1
Others	1	4	5
Total	22	33	55

Interpretation:

Castrol and MAK enjoyed the most recommendations indicating better reach.

5.2.4 SCALE ASSESSMENT: MECHANICS

The descriptive statistics of the 6 consumer behaviour constructs developed for this research are given in Table 5.27 below.

Table 5.27 Descriptive Statistics of Constructs

Construct	Mean	Standard Deviation	Skewness	Kurtosis
Mechanics' Influence	4.081	0.713	-.463	-.541
Shops' Influence	1.782	0.875	1.995	5.595
Awareness	3.655	1.417	-.570	-1.244
Knowledge	4.113	0.586	.105	-.936
Commercial Benefits	3.055	0.712	.881	1.109
Opinion Leadership	3.691	1.007	-.350	-1.033

Reliability of scale items of was tested by Cronbach's alpha test. The scores obtained for each construct exceeded the minimum requirement 0.70 (Bagozzi, 1994), as given in Table 5.28 below. The two constructs namely Shops' Influence and Awareness were measured by single item scales. Hence they were excluded from this test.

Table 5.28 Scale Reliability

Construct	Cronbach's alpha score
Mechanics' Influence	0.744
Knowledge	0.745
Commercial Benefits	0.764
Opinion Leadership	0.762

The above results conveyed adequate reliability of scales.

5.2.5 HYPOTHESES TEST

The hypotheses formulated have been tested and reported in the succeeding sections with the following details pertaining to each hypothesis or each set of hypotheses:

- The null hypothesis as well as the alternate hypothesis are reproduced once again for reference,
- The descriptive statistics of the concerned variables,
- The test used and the test results obtained,
- Decision on acceptance or rejection of the null hypothesis and
- Interpretation of the hypothesis tests.

5.2.5.1 HYPOTHESIS TEST OF FIRST HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{01} : There is no difference in awareness levels of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral oil based lubricants for their two-wheelers, with regard to (a) the product category of synthetic lubricants for two wheelers, (b) availability of synthetic lubricants in local market and (c) benefits of synthetic lubricants.

H_{11} : There is significant difference in awareness levels of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral oil based lubricants for their two-wheelers, with regard to (a) the product category of synthetic

lubricants for two-wheelers, (b) availability of synthetic lubricants in local market and (c) benefits of synthetic lubricants.

The descriptive statistics of the variables is given in Table 5.29 below.

Table 5.29 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
AWA-PC	1	68	3.75	0.741	.090	3.57	3.93	2	5
	2	332	2.21	0.877	.048	2.11	2.30	1	5
	Total	400	2.47	1.033	.052	2.37	2.57	1	5
AWA-AV	1	68	3.76	0.794	.096	3.57	3.96	2	5
	2	332	1.80	0.890	.049	1.71	1.90	1	5
	Total	400	2.14	1.143	.057	2.03	2.25	1	5
AWA-BEN	1	68	3.92	.590	.072	3.78	4.06	2.50	5
	2	332	3.30	.626	.034	3.23	3.36	1.75	5
	Total	400	3.40	.662	.033	3.34	3.46	1.75	5

where AWA-PC=Awareness of Product Category, AWA-AV is Awareness of Availability, AWA-BEN=Awareness of Benefits, Type 1=Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.30 below.

Table 5.30 ANOVA Test Results

Variables		Sum of Squares	Df	Mean Square	F	Sig.
AWA-PC	Between Groups	134.230	1	134.230	183.328	.000
	Within Groups	291.410	398	0.732		
	Total	425.640	399			
AWA-AV	Between Groups	216.928	1	216.928	283.529	.000
	Within Groups	304.509	398	0.765		
	Total	521.438	399			
AWA-BEN	Between Groups	21.760	1	21.760	56.546	.000
	Within Groups	153.159	398	.385		
	Total	174.919	399			

where, AWA-PC=Awareness of Product Category, AWA-AV is Awareness of Availability and AWA-BEN=Awareness of Benefits.

Hypotheses Test Result:

As the significance value obtained $p < .001$, all the three null hypotheses H_{01a} , H_{01b} and H_{01c} are rejected and the alternate hypotheses H_{11a} , H_{11b} and H_{11c} are accepted.

Interpretation:

AWARENESS

Awareness level of the majority of two-wheeler vehicle users was found to be low with regard to (a) product category, (b) availability and (c) benefits of

synthetic lubricants. There is significant difference in awareness levels between adopters and non-adopters. It can be inferred that increased awareness of the product category, information on availability and better understanding of benefits of its usage was one of the factors that have led to adoption by a small segment of early adopters. This is in alignment with findings of Kalish (1985) who opines that adoption is preceded by awareness. Further, this indicates that there exists a huge untapped target population. Lack of awareness amongst a large section of the target population reflects poorly on reach and effectiveness of marketing communications of lubricants marketers. It also suggests low social information exchange.

5.2.5.2 HYPOTHESIS TEST OF SECOND HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{02} : There is no difference in involvement levels in the purchase process of lubricants of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral oil based lubricants for their two-wheelers.

H_{12} : There is significant difference in involvement levels in the purchase process of lubricants of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral oil based lubricants for their two-wheelers.

The descriptive statistics of the variables is given in Table 5.31 below.

Table 5.31 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
INV 1	68	3.657	.684	.083	3.49	3.82	2	5
2	332	3.046	.736	.040	2.97	3.13	1	5
Total	400	3.150	.762	.038	3.08	3.22	1	5

where, INV=Involvement, Type 1=Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.32 below.

Table 5.32 ANOVA Test Results

		Sum of Squares	df	Mean Square	F	Sig.
INV	Between Groups	21.048	1	21.048	39.816	.000
	Within Groups	210.396	398	.529		
	Total	231.444	399			

Hypotheses Test Result:

As the significance value obtained is $p < .001$, null hypothesis H_{02} is rejected and the alternate hypothesis H_{12} is accepted.

Interpretation:

INVOLVEMENT

Involvement level of respondents in lubricant purchase and usage process was found to be moderate. There is significant difference in involvement levels between adopters and non-adopters. It can be inferred that higher involvement was one of the factors that have led to adoption by a small segment of early adopters. This is contrary to classification of lubricants as a low involvement category product in extant literature (Kotler, 1993). This indicates a change in consumer behaviour over time, by way of greater involvement, possibly due to advancement in automobile technology, higher vehicle performance requirements by consumers and quantum jump in cost of lubricants, compared to that in earlier decades.

5.2.5.3 HYPOTHESIS TEST OF THIRD HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{03} : There is no difference in interest levels of two-wheeler motor vehicle users who use synthetic lubricants for their two-wheelers compared to those who use conventional mineral oil based lubricants, in acquiring knowledge about synthetic lubricants for their vehicle.

H_{13} : There is significant difference in interest levels of two-wheeler motor vehicle users who use synthetic lubricants for their two-wheelers compared to those who use conventional mineral oil based lubricants, in acquiring knowledge about synthetic lubricants for their vehicle.

The descriptive statistics of the variables is given in Table 5.33 below.

Table 5.33 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
INT 1	68	3.90	.883	.107	3.68	4.11	1	5
2	332	3.43	.992	.054	3.33	3.54	1	5
Total	400	3.51	.989	.049	3.42	3.61	1	5

where, INT=INTEREST, Type 1=Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.34 below.

Table 5.34 ANOVA Test Results

		Sum of Squares	Df	Mean Square	F	Sig.
INT	Between Groups	12.116	1	12.116	12.763	.000
	Within Groups	377.822	398	.949		
	Total	389.937	399			

Hypotheses Test Result:

As the significance value obtained is $p < .001$, null hypothesis H_{03} is rejected and the alternate hypothesis H_{13} is accepted.

Interpretation:

INTEREST

Interest level of respondents in acquiring knowledge about synthetic lubricants for their vehicle was found to be moderate. There is significant difference in interest levels between adopters and non-adopters. It can be inferred that higher interest level was one of the factors that motivated a small segment of the target population to acquire further information, advice and knowledge on the benefits of usage of synthetic lubricants, which in turn spurred them into adopting the new product category. This is in agreement with findings of Engel and Blackwell (1982), Slama et. al. (1992) and Wiedmann et. al. (2001), who have indicated that adopters of innovation are consumers with high level of interest in the product category and marketplace information

5.2.5.4 HYPOTHESIS TEST OF FOURTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H₀₄ : There is no difference in (a) price sensitivity due to higher initial purchase price and (b) perception of greater value for money of synthetic lubricants compared to conventional mineral oil based lubricants, as perceived by two-wheeler motor vehicle users who use synthetic lubricants for their two-wheelers compared to those who use conventional mineral based lubricants.

H₁₄: There is significant difference in (a) price sensitivity due to higher initial purchase price and (b) perception of greater value for money of synthetic lubricants compared to conventional mineral oil based lubricants, as perceived by two-wheeler motor vehicle users who use synthetic lubricants for their two-wheelers compared to those who use conventional mineral based lubricants.

The descriptive statistics of the variables is given in Table 5.35 below.

Table 5.35 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
PS 1	68	3.75	.952	.115	3.52	3.98	1	5
2	332	3.13	1.100	.060	3.01	3.25	1	5
Total	400	3.24	1.100	.055	3.13	3.35	1	5
VFM 1	68	4.16	.784	.095	3.97	4.35	2	5
2	332	3.30	.935	.051	3.19	3.40	1	5
Total	400	3.44	.966	.048	3.35	3.54	1	5

where, PS=Price Sensitivity, VFM=Perception of Value of Money, Type 1=Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.36 below.

Table 5.36 ANOVA Test Results

		Sum of Squares	df	Mean Square	F	Sig.
PS	Between Groups	21.519	1	21.519	18.581	.000
	Within Groups	460.919	398	1.158		
	Total	482.437	399			
VFM	Between Groups	42.385	1	42.385	51.073	.000
	Within Groups	330.293	398	.830		
	Total	372.678	399			

Hypotheses Test Result:

As the significance value obtained is $p < .001$, null hypothesis H_{04} is rejected and the alternate hypothesis H_{14} is accepted.

Interpretation:**VALUE FOR MONEY**

Price Sensitivity and the perception of value for money of respondents, with respect to synthetic lubricants, were found to be moderate. There is significant difference between adopters and non-adopters on both of these constructs. It can be inferred that inspite of acknowledging the initial higher purchase price of synthetic lubricants, adopters considered the product to offer greater value for money, which was one of the factors that prompted them in adoption and usage of synthetic lubricants. This is in agreement with findings of Bass (1966) and Kalish (1985), as adoption occurs when perceived risk adjusted

value exceeds price. It can be inferred that communication of value for money concept can increase adoption.

5.2.5.5 HYPOTHESIS TEST OF FIFTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H₀₅ : There is no difference in vehicle characteristics like (a) category, (b) age, (c) make and (d) engine cubic capacity of the two-wheeler motor vehicles of users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.

H₁₅ : There is significant difference in vehicle characteristics like (a) category, (b) age, (c) make and (d) engine cubic capacity of the two-wheeler motor vehicles of users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.

The descriptive statistics of the demographic variables have been provided in the earlier section 5.2.1. as cross tabulation with type of lubricant used. The data has been analyzed in detail, to better understand the profile of early adopters of synthetic lubricants.

The hypotheses have been tested using Chi Square test and the results are given in Table 5.37 below.

Table 5.37 CHI SQUARE Test Results

Type of lubricant * Variable	N of Valid Cases	Value	df	Asymp. Sig. (2-sided)	Remarks
Type * TWC	400	6.757 ^a	2	0.034	a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.76.
Type * TWAGE	400	25.863 ^a	3	0.000	a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.50.
Type * TWM	400	12.264 ^a	12	0.425	a. 13 cells (50.0%) have expected count less than 5. The minimum expected count is .17.
Type * TWCC	400	18.354 ^a	4	0.001	a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .34.

where, Type=Type of lubricant, TWC=Two-wheeler Category, TWAGE=Age of Two-wheeler, TWM=Make or Brand of Two-wheeler and TWCC=Two-wheeler Engine Cubic Capacity.

Hypotheses Test Result:

As the significance value obtained $p < .05$ in case of vehicle characteristics like (a) category, (b) age and (d) engine cubic capacity, null hypotheses H_{05a} , H_{05b} , and H_{05d} are rejected and the alternate hypotheses H_{15a} , H_{15b} and H_{15d} are accepted, while the significance value obtained $p > .05$ in case of vehicle characteristic (c) make, null hypotheses H_{05c} is accepted.

Interpretation:

VEHICLE CHARACTERISTICS

There is significant difference on certain critical vehicle characteristics.

Adopters and non-adopters had significant differences in terms of (a) category, (b) age and (d) engine cubic capacity of their vehicle, while there is no significant difference in terms of (c) make. Somewhat new motorcycles of high engine cubic capacity were found to use synthetic lubricants. It can be inferred that respondents using older vehicles as well as those using scooters and mopeds remained untapped. Further, this indicates that these categories of two-wheelers can be specifically targeted with differentiated offering to foster adoption of synthetic lubricants.

5.2.5.6 HYPOTHESIS TEST OF SIXTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{06} : There is no difference in demographic factors like (a) age, (b) formal education, (c) gender, (d) marital status, (e) occupation and (f) family monthly take-home income of two-wheeler motor vehicle users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.

H_{16} : There is significant difference in demographic factors like (a) age, (b) formal education, (c) gender, (d) marital status, (e) occupation and (f) family monthly take-home income of two-wheeler motor vehicle users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.

As stated earlier, the descriptive statistics of the demographic variables have been provided in the earlier section 5.2.1. as cross tabulation with type of lubricant used. The data has been analyzed in detail, to better understand the demographic profile of early adopters of synthetic lubricants.

The hypotheses have been tested using Chi Square test and the results are given in Table 5.38 below.

Table 5.38 CHI SQUARE Test Results

Type of lubricant * Variable	N of Valid Cases	Value	df	Asymp. Sig. (2-sided)	Remarks
Type * AGE	400	5.069 ^a	3	0.167	a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.61.
Type * ED	400	1.328 ^a	2	0.515	a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.78.
Type * GEN	400	1.179 ^a	1	0.277	a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.55.
Type * MAR	400	.928 ^a	1	0.335	a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 30.60.
Type * OCN	400	8.378 ^a	3	0.039	a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.48.
Type * MI	400	3.731 ^a	4	0.444	a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.65.

where, Type=Type of lubricant, AGE=Age of respondents, ED=Educational Qualification, GEN=Gender, MAR=Marital Status, OCN=Occupation and MI= Family Monthly Take-Home Income.

Hypotheses Test Result:

As the significance value obtained $p < .05$ in case of demographic factor (e) occupation, null hypothesis H_{06e} is rejected and the alternate hypothesis H_{16e} is accepted, whereas the significance value obtained $p > .05$ in case of demographic factors like (a) age, (b) formal education, (c) gender, (d) marital status, and (f) family monthly take-home income, null hypotheses H_{06a} , H_{06b} , H_{06c} , H_{06d} and H_{06f} are accepted.

Interpretation:

DEMOGRAPHIC FACTORS

There is significant difference on demographic factor of (e) occupation, as self-employed persons are adopters, while there is no significant difference on other factors like (a) age, (b) formal education, (c) gender, (d) marital status, and (f) family monthly take-home income. As self-employed persons exhibit high levels of risk taking and self confidence, the finding is similar to that of Goldsmith (2001) in terms of dimensions of adopters as innovative customers.

5.2.5.7 HYPOTHESIS TEST OF SEVENTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{07} : There is no difference in consumer behaviour characteristics like (a) Customer Innovativeness, (b) Opinion Leadership, (c) Market Mavenism and (d) Two-Wheeler Enthusiasm exhibited by two-wheeler motor vehicle users who use synthetic lubricants for their two-wheeler

motor vehicle compared to those who use conventional mineral oil based lubricants.

H₁₇: There is significant difference in consumer behaviour characteristics like (a) Customer Innovativeness, (b) Opinion Leadership, (c) Market Mavenism and (d) Two-Wheeler Enthusiasm exhibited by two-wheeler motor vehicle users who use synthetic lubricants for their two-wheeler motor vehicle compared to those who use conventional mineral oil based lubricants.

The descriptive statistics of the variables is given in Table 5.39 below.

Table 5.39 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
CI	1	68	3.404	1.253	.1519	3.101	3.708	1	5
	2	332	2.711	.980	.0538	2.605	2.817	1	5
	Total	400	2.829	1.062	.0531	2.724	2.933	1	5
OL	1	68	3.566	.914	.1108	3.345	3.787	1	5
	2	332	2.970	.950	.0521	2.867	3.072	1	5
	Total	400	3.071	.970	.0485	2.976	3.167	1	5
MM	1	68	3.662	.920	.112	3.439	3.884	2	5
	2	332	3.045	.923	.051	2.946	3.145	1	5
	Total	400	3.150	.950	.048	3.057	3.243	1	5

Table 5.39 continued

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
TWE 1	68	4.140	.800	.0971	3.946	4.333	1.5	5.0
2	332	3.354	1.026	.0563	3.243	3.465	1.0	5.0
Total	400	3.488	1.033	.0517	3.386	3.589	1.0	5.0

where, CI= Customer Innovativeness, OL=Opinion Leadership, MM= Market Mavenism, TWE=Two-Wheeler Enthusiasm, Type 1=Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.40 below.

Table 5.40 ANOVA Test Results

		Sum of Squares	df	Mean Square	F	Sig.
CI	Between Groups	27.150	1	27.150	25.553	.000
	Within Groups	422.870	398	1.062		
	Total	450.019	399			
OL	Between Groups	20.068	1	20.068	22.521	.000
	Within Groups	354.651	398	.891		
	Total	374.719	399			

Table 5.40 continued

		Sum of Squares	df	Mean Square	F	Sig.
MM	Between Groups	21.457	1	21.457	25.226	.000
	Within Groups	338.543	398	.851		
	Total	360.000	399			
TWE	Between Groups	34.850	1	34.850	35.466	.000
	Within Groups	391.088	398	.983		
	Total	425.938	399			

Hypotheses Test Result:

As the significance value obtained $p < .001$, all the four null hypotheses H_{07a} , H_{07b} , H_{07c} and H_{07d} are rejected and the alternate hypotheses H_{17a} , H_{17b} , H_{17c} and H_{17d} are accepted.

Interpretation:

CONSUMER BEHAVIOUR CHARACTERISTICS

The levels of Consumer behaviour characteristics like (a) Customer Innovativeness, (b) Opinion Leadership and (c) Market Mavenism were found to be moderate, while (d) Two-Wheeler Enthusiasm was high for majority of respondents. There is significant difference in these characteristics between adopters and non adopters. Adopters exhibited high levels of all the four consumer behaviour characteristics. This indicates that these characteristics are one of the major factors differentiating adopters.

These findings are in agreement with that of several researchers of consumer behaviour like Katz and Lazarsfeld (1955), King and Summers (1970), Feick and Price (1987) and Goldsmith and Hofacker (1991).

5.2.5.8 HYPOTHESIS TEST OF EIGHTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{08} : There is no difference in effect of marketing promotions of lubricants marketers by advertisement through various media, namely (a) In-store display, (b) In-store posters, (c) Outdoor hoardings, (d) Newspaper advertisements, (e) Advertisement in Magazines, (f) FM Radio advertisements, (g) Television advertisements and (h) online advertisements, on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

H_{18} : There is significant difference in effect of marketing promotions of lubricants marketers by advertisement through various media namely (a) In-store display, (b) In-store posters, (c) Outdoor hoardings, (d) Newspaper advertisements, (e) Advertisement in Magazines, (f) FM Radio advertisements, (g) Television advertisements and (h) online advertisements, on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

The descriptive statistics of the variables is given in Table 5.41 below.

Table 5.41 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
AISD	1	68	3.07	1.577	.191	2.69	3.46	1	5
	2	332	2.92	1.517	.083	2.76	3.09	1	5
	Total	400	2.95	1.527	.076	2.80	3.10	1	5
AISP	1	68	3.15	1.528	.185	2.78	3.52	1	5
	2	332	2.90	1.377	.076	2.75	3.05	1	5
	Total	400	2.94	1.405	.070	2.80	3.08	1	5
AOH	1	68	2.87	1.326	.161	2.55	3.19	1	5
	2	332	3.05	1.341	.074	2.90	3.19	1	5
	Total	400	3.02	1.339	.067	2.89	3.15	1	5
ANP	1	68	2.68	1.343	.163	2.35	3.00	1	5
	2	332	2.85	1.239	.068	2.72	2.98	1	5
	Total	400	2.82	1.258	.063	2.70	2.94	1	5
AMAG	1	68	2.59	1.237	.150	2.29	2.89	1	5
	2	332	2.81	1.131	.062	2.69	2.93	1	5
	Total	400	2.77	1.151	.058	2.66	2.88	1	5
AFM	1	68	2.35	1.062	.129	2.10	2.61	1	5
	2	332	2.60	1.217	.067	2.47	2.73	1	5
	Total	400	2.56	1.194	.060	2.44	2.67	1	5

Table 5.41 continued

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
ATV 1	68	3.44	1.354	.164	3.11	3.77	1	5
2	332	3.25	1.356	.074	3.10	3.40	1	5
Total	400	3.28	1.355	.068	3.15	3.42	1	5
AWEB 1	68	2.76	1.373	.166	2.43	3.10	1	5
2	332	2.73	1.218	.067	2.60	2.87	1	5
Total	400	2.74	1.243	.062	2.62	2.86	1	5

where, AISD=Display Advertisement, AISP=Posters Advertisement, AOH=Outdoor Advertisement, ANP=Newspaper Advertisements, AMAG=Advertisement in Magazines, AFM=FM Radio Advertisements, ATV=Television advertisements, AWEB= online advertisements, Type 1= Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.42 below.

Table 5.42 ANOVA Test Results

		Sum of Squares	df	Mean Square	F	Sig.
AISD	Between Groups	1.301	1	1.301	.558	.456
	Within Groups	928.596	398	2.333		
	Total	929.898	399			

Table 5.42 continued

		Sum of Squares	df	Mean Square	F	Sig.
AISP	Between Groups	3.428	1	3.428	1.740	.188
	Within Groups	784.249	398	1.970		
	Total	787.678	399			
AOH	Between Groups	1.840	1	1.840	1.027	.312
	Within Groups	713.038	398	1.792		
	Total	714.877	399			
ANP	Between Groups	1.688	1	1.688	1.067	.302
	Within Groups	629.352	398	1.581		
	Total	631.040	399			
AMAG	Between Groups	2.707	1	2.707	2.048	.153
	Within Groups	526.133	398	1.322		
	Total	528.840	399			
AFM	Between Groups	3.345	1	3.345	2.354	.126
	Within Groups	565.445	398	1.421		
	Total	568.790	399			
ATV	Between Groups	2.063	1	2.063	1.123	.290
	Within Groups	731.015	398	1.837		
	Total	733.077	399			
AWEB	Between Groups	.050	1	.050	.032	.858
	Within Groups	616.910	398	1.550		
	Total	616.960	399			

Hypotheses Test Result:

As the significance value obtained $p > .05$ in case of advertisement through (a) In-store display, (b) In-store posters, (c) Outdoor hoardings, (d) Newspaper advertisements, (e) Advertisement in Magazines, (f) FM Radio advertisements, (g) Television advertisements and (h) online advertisements, the null hypotheses H_{08a} , H_{08b} , H_{08c} , H_{08d} , H_{08e} , H_{08f} and H_{08g} are accepted.

Interpretation:

ADVERTISEMENT

The extent of impact of marketing promotions through various modes of advertisement on the target population has been low to moderate for all the respondents. There is no difference in effect of advertisement on adoption of synthetic lubricants. This is in accordance with the findings of Abraham and Lodish (1990) on muted success of advertisement and with the findings of Dens and Pelsmacker (2010) on distinctiveness of advertisement of new products with positive emotional and informational appeal, as lack of these features possibly contributed to muted advertisement recall and impact.

5.2.5.9 HYPOTHESIS TEST OF NINTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{09} : There is no difference in effect of marketing promotions of lubricants marketers by way of various below the line promotional activities namely (a) sales campaigns at petrol pumps, (b) sales campaigns at

lubricants shops, (c) discounts, (d) free gifts and (e) lucky draws on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

H₁₉ : There is significant difference in effect of marketing promotions of lubricants marketers by way of various below the line promotional activities namely (a) sales campaigns at petrol pumps, (b) sales campaigns at lubricants shops, (c) discounts, (d) free gifts and (e) lucky draws on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

The descriptive statistics of the variables is given in Table 5.43 below.

Table 5.43 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
SPP	1	68	2.72	1.232	.149	2.42	3.02	1	5
	2	332	2.41	1.143	.063	2.29	2.53	1	5
	Total	400	2.46	1.163	.058	2.35	2.58	1	5
SPLS	1	68	2.46	1.152	.140	2.18	2.73	1	5
	2	332	2.47	1.117	.061	2.35	2.59	1	5
	Total	400	2.47	1.121	.056	2.36	2.58	1	5

Table 5.43 continued

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
SPD	1	68	3.01	1.491	.181	2.65	3.38	1	5
	2	332	3.20	1.305	.072	3.06	3.35	1	5
	Total	400	3.17	1.339	.067	3.04	3.30	1	5
SPG	1	68	2.66	1.253	.152	2.36	2.97	1	5
	2	332	3.17	1.331	.073	3.02	3.31	1	5
	Total	400	3.08	1.330	.067	2.95	3.21	1	5
SPLD	1	68	2.62	1.246	.151	2.32	2.92	1	5
	2	332	2.64	1.343	.074	2.49	2.78	1	5
	Total	400	2.63	1.325	.066	2.50	2.76	1	5

where, SPP=Sales campaigns at petrol pumps, SPLS=Sales campaigns at lubricants shops, SPD=Promotions through Discounts, SPG=Promotions through Free Gifts, SPLD=Promotions through Lucky Draws, Type 1=Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.44 below.

Table 5.44 ANOVA Test Results

		Sum of Squares	df	Mean Square	F	Sig.
SPP	Between Groups	5.457	1	5.457	4.067	.044
	Within Groups	533.980	398	1.342		
	Total	539.438	399			
SPLS	Between Groups	.016	1	.016	.013	.909
	Within Groups	501.624	398	1.260		
	Total	501.640	399			
SPD	Between Groups	2.040	1	2.040	1.139	.287
	Within Groups	713.058	398	1.792		
	Total	715.098	399			
SPG	Between Groups	14.503	1	14.503	8.344	.004
	Within Groups	691.775	398	1.738		
	Total	706.278	399			
SPLD	Between Groups	.018	1	.018	.010	.919
	Within Groups	700.959	398	1.761		
	Total	700.977	399			

Hypotheses Test Result:

As the significance value obtained $p < .05$ in case of below the line promotional activities namely (a) sales campaigns at petrol pumps and (d) free gifts, the null hypotheses H_{09a} and H_{09d} are rejected and the alternate hypotheses H_{19a} and H_{19d} are accepted, whereas the significance value obtained $p > .05$ in case

of below the line promotional activities namely (b) sales campaigns at lubricants shops (c) discounts and (e) lucky draws, the null hypotheses H_{09b} , H_{09c} and H_{09e} are accepted.

Interpretation:

BELOW THE LINE SALES PROMOTIONS

The extent of impact of marketing promotions through different modes of below the line promotions on the target population has been moderate for all the respondents. There is significant difference in effect of promotions through sales campaigns at petrol pumps and free gifts, on adoption of synthetic lubricants, whereas there is no difference in effect of other modes of promotions. This concurs with findings of Loewenstein (1994).

5.2.5.10 HYPOTHESIS TEST OF TENTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{010} : There is no difference in effect of marketplace influencers like (a) Innovative Customers, (b) Opinion Leaders, (c) Market Mavens, (d) Social, online media including blogs and product category influencers like (e) Motor Vehicle Mechanics and (f) Salespersons of Lubricants shops on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

H₁₁₀: There is significant difference in effect of marketplace influencers like (a) Innovative Customers, (b) Opinion Leaders, (c) Market Mavens, (d) Social, online media including blogs and product category influencers like (e) Motor Vehicle Mechanics and (f) Salespersons of Lubricants shops on adoption of synthetic lubricants compared to usage of conventional mineral oil based lubricants by two-wheeler motor vehicle users in their two-wheeler motor vehicles.

The descriptive statistics of the variables is given in Table 5.45 below.

Table 5.45 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
IIC	1	68	2.97	1.257	.152	2.67	3.27	1	5
	2	332	2.81	1.251	.069	2.68	2.95	1	5
	Total	400	2.84	1.252	.063	2.72	2.96	1	5
IOL	1	68	3.37	1.348	.164	3.04	3.69	1	5
	2	332	2.98	1.223	.067	2.85	3.11	1	5
	Total	400	3.05	1.252	.063	2.92	3.17	1	5
IMM	1	68	3.18	1.245	.151	2.88	3.48	1	5
	2	332	2.87	1.176	.065	2.74	3.00	1	5
	Total	400	2.92	1.192	.060	2.81	3.04	1	5

Table 5.45 continued

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
ISM	1	68	3.10	1.306	.158	2.79	3.42	1	5
	2	332	2.61	1.198	.066	2.48	2.74	1	5
	Total	400	2.70	1.229	.061	2.57	2.82	1	5
IME	1	68	2.84	1.141	.138	2.56	3.11	1	5
	2	332	3.33	1.165	.064	3.21	3.46	1	5
	Total	400	3.25	1.175	.059	3.13	3.36	1	5
ISP	1	68	2.79	1.216	.147	2.50	3.09	1	5
	2	332	3.22	1.223	.067	3.09	3.35	1	5
	Total	400	3.15	1.231	.062	3.03	3.27	1	5

where, IIC=Influence of Innovative Customers, IOL=Influence of Opinion Leaders, IMM=Influence of Market Mavens, ISM=Influence of Social, online media, IME=Influence of Mechanics, ISP=Influence of Salespersons, Type 1= Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.46 below.

Table 5.46 ANOVA Test Results

		Sum of Squares	df	Mean Square	F	Sig.
IIC	Between Groups	1.397	1	1.397	.891	.346
	Within Groups	624.363	398	1.569		
	Total	625.760	399			
IOL	Between Groups	8.529	1	8.529	5.505	.019
	Within Groups	616.661	398	1.549		
	Total	625.190	399			
IMM	Between Groups	5.284	1	5.284	3.747	.054
	Within Groups	561.313	398	1.410		
	Total	566.598	399			
ISM	Between Groups	13.634	1	13.634	9.210	.003
	Within Groups	589.156	398	1.480		
	Total	602.790	399			
IME	Between Groups	13.723	1	13.723	10.175	.002
	Within Groups	536.775	398	1.349		
	Total	550.498	399			
ISP	Between Groups	10.231	1	10.231	6.854	.009
	Within Groups	594.066	398	1.493		
	Total	604.297	399			

Hypotheses Test Result:

As the significance value obtained $p < .05$, in case of influence by influencers like (b) Opinion Leaders, (d) Social, online media, (e) Motor Vehicle Mechanics and (f) Salespersons of Lubricants shops, null hypotheses H_{010b} , H_{010d} , H_{010e} and H_{010f} are rejected and the alternate hypotheses H_{110b} , H_{110d} , H_{110e} and H_{110f} are accepted, whereas the significance value obtained $p > .05$, in case of influence by influencers like (a) Innovative Customers and (c) Market Mavens, null hypotheses H_{010a} and H_{010c} are accepted.

Interpretation:

Influence by marketplace influencers like (b) Opinion Leaders, (d) Social, online media (e) Motor Vehicle Mechanics and (f) Salespersons of Lubricants shops have a significant effect on adoption of synthetic lubricants. It is evident that prospective customers value their credible opinion much more than promotional communications of marketers. Exposure to these influencers has been one of the factors in adoption. This is in agreement with the findings of Rogers (2003) and Goldenberg et. al. (2006).

5.2.5.11 HYPOTHESIS TEST OF ELEVENTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{011} : There is no difference in satisfaction levels of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral based lubricants for their two-wheeler motor

vehicle with regard to the perceived performance of the lubricant used by them.

H₁₁₁: There is significant difference in satisfaction levels of two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral based lubricants for their two-wheeler motor vehicle with regard to the perceived performance of the lubricant used by them.

The descriptive statistics of the variables is given in Table 5.47 below.

Table 5.47 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
SAT 1	68	4.00	1.120	.136	3.73	4.27	1	5
2	332	3.62	1.058	.058	3.51	3.73	1	5
Total	400	3.69	1.076	.054	3.58	3.79	1	5

where, SAT=Satisfaction, Type 1= Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.48 below.

Table 5.48 ANOVA Test Results

		Sum of Squares	Df	Mean Square	F	Sig.
C-SAT	Between Groups	8.129	1	8.129	7.124	.008
	Within Groups	454.181	398	1.141		
	Total	462.310	399			

Hypotheses Test Result:

As the significance value obtained is $p < .05$, null hypothesis H_{011} is rejected and the alternate hypothesis H_{111} is accepted.

Interpretation:

SATISFACTION

Satisfaction level of majority of respondents is high. There is significant difference in satisfaction level of adopters compared to non adopters of synthetic lubricants. This indicates lower incentive for customers to switch from their current choices. This is in agreement with findings of Gounaris and Koritos (2012) on self-reinforcing adoption decisions based on satisfaction of specific benefits received.

5.2.5.12 HYPOTHESIS TEST OF TWELVETH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{012} : There is no difference in brand loyalty exhibited by two-wheeler motor vehicle users who use synthetic lubricants compared to those who use

conventional mineral based lubricants for their two-wheeler motor vehicle.

H₁₁₂: There is significant difference in brand loyalty exhibited by two-wheeler motor vehicle users who use synthetic lubricants compared to those who use conventional mineral based lubricants for their two-wheeler motor vehicle.

The descriptive statistics of the variables is given in Table 5.49 below.

Table 5.49 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
LOY 1	68	3.949	.811	.098	3.752	4.145	1	5
2	332	3.435	.848	.047	3.344	3.527	1	5
Total	400	3.523	.863	.043	3.438	3.607	1	5

where, LOY=Brand Loyalty, Type 1= Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.50 below.

Table 5.50 ANOVA Test Results

		Sum of Squares	Df	Mean Square	F	Sig.
LOY	Between Groups	14.870	1	14.870	20.992	.000
	Within Groups	281.928	398	.708		
	Total	296.797	399			

Hypotheses Test Result:

As the significance value obtained is $p < .001$, null hypothesis H_{012} is rejected and the alternate hypothesis H_{112} is accepted.

Interpretation:

BRAND LOYALTY

Brand Loyalty levels are moderately high for majority of respondents. Significant difference is observed between adopters and non adopters in brand loyalty. High levels of brand loyalty is interpreted as deep liking, trust and finding value in a brand, arising out of customer expectations being adequately met. This is agreement with findings of Srivastava (2013). However it poses a challenge to marketers to win over customers from competing brands.

5.2.5.13 HYPOTHESIS TEST OF THIRTEENTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{013} : There is no difference in perception of mechanics of independent two-wheeler motor vehicle workshops, with regard to influence exerted

over users, by recommendation of (a) mechanics themselves and (b) lubricant shop sales persons, between those who recommend synthetic lubricants and those who recommend conventional mineral oil based lubricants to their clientele.

H₁₁₃: There is significant difference in perception of mechanics of independent two-wheeler motor vehicle workshops, with regard to influence exerted over users, by recommendation of (a) mechanics themselves and (b) lubricant shop sales persons, between those who recommend synthetic lubricants and those who recommend conventional mineral oil based lubricants to their clientele.

The descriptive statistics of the variables is given in Table 5.51 below.

Table 5.51 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					MEIN 1	22		
2	33	3.970	.749	.130	3.704	4.235	2	5
Total	55	4.018	.713	.096	3.825	4.211	2	5
LSIN 1	22	1.591	.503	.107	1.368	1.814	1	5
2	33	1.909	1.042	.181	1.540	2.279	1	5
Total	55	1.782	.875	.118	1.545	2.019	1	5

where, MEIN=Influence by Mechanics, LSIN=Influence by salespersons, Type 1= Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.52 below.

Table 5.52 ANOVA Test Results

		Sum of Squares	Df	Mean Square	F	Sig.
MEIN	Between Groups	.194	1	.195	.377	.542
	Within Groups	27.288	53	.515		
	Total	27.482	54			
LSIN	Between Groups	1.336	1	1.336	1.769	.189
	Within Groups	40.045	53	.756		
	Total	41.382	54			

Hypotheses Test Result:

As the significance value obtained $p > .05$, null hypotheses H_{013a} and H_{013b} are accepted.

Interpretation:

PERCEPTION OF INFLUENCE

The perception of mechanics with regard to influence exerted over users (a) mechanics themselves is found to be high for majority of respondents, whereas it is low in case of (b) lubricant shop sales persons. There is no difference on the above perception of mechanics based on their recommendatory behaviour. This indicates a high level of confidence of mechanics regarding their influence on customers. This finding is both an opportunity for marketers to cultivate and incentivize them to recommend their brand, whereas they pose a

challenge to marketers in their channel partners relationship as well as direct influence of consumer behaviour.

5.2.5.14 HYPOTHESIS TEST OF FOURTEENTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H₀₁₄: There is no difference in awareness levels, on synthetic lubricants, of mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

H₁₁₄: There is significant difference in awareness levels, on synthetic lubricants, of mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

The descriptive statistics of the variables is given in Table 5.53 below.

Table 5.53 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
AWA 1	22	3.591	1.333	.284	2.999	4.182	1	5
2	33	3.697	1.489	.259	3.169	4.225	1	5
Total	55	3.655	1.417	.191	3.272	4.038	1	5

where, AWA=Awareness of Mechanics, Type 1= Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.54 below.

Table 5.54 ANOVA Test Results

		Sum of Squares	Df	Mean Square	F	Sig.
AWA	Between Groups	.148	1	.148	.073	.789
	Within Groups	108.288	53	2.043		
	Total	108.436	54			

Hypotheses Test Result:

As the significance value obtained $p > .05$, null hypothesis H_{014} is accepted.

Interpretation:

Awareness level of mechanics on synthetic lubricants is high. There is no difference in awareness between mechanics based on their recommendatory behaviour. This indicated that awareness is not a factor in determining their recommendatory behaviour. Lubricant marketers should therefore build on basic awareness and explore various modes of incentives to promote recommendation of synthetic lubricants.

5.2.5.15 HYPOTHESIS TEST OF FIFTEENTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H₀₁₅: There is no difference in knowledge levels on lubricants and engine lubrication, of mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

H₁₁₅: There is significant difference in knowledge levels on lubricants and engine lubrication, of mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

The descriptive statistics of the variables is given in Table 5.55 below.

Table 5.55 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					KNO 1	22		
2	33	4.127	.640	.111	3.900	4.354	3	5
Total	55	4.113	.586	.079	3.954	4.271	3	5

where, KNO=Knowledge of Mechanics, Type 1= Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.56 below.

Table 5.56 ANOVA Test Results

		Sum of Squares	Df	Mean Square	F	Sig.
KNO	Between Groups	.017	1	.017	.050	.824
	Within Groups	18.524	53	.350		
	Total	18.541	54			

Hypotheses Test Result:

As the significance value obtained $p > .05$, null hypothesis H_{015} is accepted.

Interpretation:

KNOWLEDGE

Knowledge level of mechanics on synthetic lubricants is high. There is no difference in knowledge between mechanics based on their recommendatory behaviour. This indicated that knowledge is not a factor in determining their recommendatory behaviour. Lubricant marketers should therefore explore other factors like enhanced engagement, long term commercial tie-ups and attractive incentives to mechanics as a means to promote recommendation of synthetic lubricants.

5.2.5.16 HYPOTHESIS TEST OF SIXTEENTH HYPOTHESIS

The null and alternate hypotheses are reproduced as follows:

H_{016} : There is no difference in behavioural characteristics like (a) Commercial Motive and (b) Opinion Leadership exhibited by mechanics of independent two-wheeler motor vehicle workshops who recommend

synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

H₁₁₆: There is significant difference in behavioural characteristics like (a) Commercial Motive and (b) Opinion Leadership exhibited by mechanics of independent two-wheeler motor vehicle workshops who recommend synthetic lubricants compared to those who recommend conventional mineral oil based lubricants to their clientele.

The descriptive statistics of the variables is given in Table 5.57 below.

Table 5.57 Descriptive Statistics of Variables

Variable against Type of lubricant	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					COM 1	22		
2	33	2.803	.514	.090	2.621	2.986	1.50	4
Total	55	3.055	.712	.096	2.862	3.247	1.50	5
OL 1	22	3.364	1.049	.224	2.899	3.829	1.50	5
2	33	3.909	.931	.162	3.579	4.239	2.00	5
Total	55	3.691	1.007	.136	3.419	3.963	1.50	5

where, COM=Commercial Motive, OL=Opinion Leadership, Type 1=Synthetic lubricants and Type 2=Mineral oil based lubricants.

The hypotheses have been tested using ANOVA test and the results are given in Table 5.58 below.

Table 5.58 ANOVA Test Results

		Sum of Squares	Df	Mean Square	F	Sig.
COM	Between Groups	5.219	1	5.219	12.506	.001
	Within Groups	22.117	53	.417		
	Total	27.336	54			
OL	Between Groups	3.927	1	3.927	4.096	.048
	Within Groups	50.818	53	.959		
	Total	54.745	54			

Hypotheses Test Result:

As the significance value obtained is $p < .05$, in both the cases, null hypotheses H_{016a} and H_{016b} are rejected and the alternate hypotheses H_{116a} and H_{116b} are accepted.

Interpretation:**BEHAVIOURAL CHARACTERISTICS**

Behavioural characteristics (a) Commercial Motive and (b) Opinion Leadership of mechanics is found to be high in majority of respondents. There is significant difference in these characteristics between respondents based on their recommendatory behaviour, indicating these to be major factors influencing their behaviour. This finding provides immense scope to lubricants marketers to emphasize more on commercial incentives and continual engagement with them, so as to respond positively to these factors. Addressing these issues will satisfy their esteem needs and yield improved results through willful positive recommendation.

5.2.6 FACTOR ANALYSIS

Exploratory Factor Analysis was performed on the 19 items of sources of influence of mechanics, mentioned in the measurement scale, to reduce the 19 variables to a grouping of few latent variables which explains the observed variables. Principal Component Analysis was used as it is the most commonly used approach, which transforms variables into uncorrelated composite variables or principal components. Orthogonal rotation was selected as it yields factors in the final solution which have no correlation amongst them. The criteria used for factor extraction were that the Eigen values, which are the sum of variances of factor values, should be greater than one and that the factor structure should be meaningful, useful and conceptually sound (Pett et al., 2003). Descriptive statistics of the 19 items are given in Table 5.59.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy test result obtained was 0.590, as given in Table 5.60. As the value is more than 0.5, it indicates that the sample is reasonably adequate and the data supports application of factor analysis.

Communalities denote the variance in the original measured variables that is accounted for by the factor solution. The factor extraction values of the 19 variables are given in Table 5.61 which shows that the value extracted for every variable, except one, is greater than 0.5.

Table 5.59 Descriptive Statistics of Variables

Variables	Mean	Std. Deviation	Skewness	Kurtosis
Merchandising – Stores	1.56	0.501	-0.264	-2.005
Advertisement - Posters	1.67	0.511	-0.319	-0.932
Advertisement – Outdoor	1.65	0.615	0.367	-0.612
Advertisement – Newspapers	2.45	0.939	0.345	-0.766
Advertisement – Magazines	2.53	0.92	0.361	-0.123
Advertisement - FM Radio	1.51	0.505	-0.037	-2.075
Advertisement – TV	2.85	1.161	0.22	-1.09
Advertisement – Online	2.35	1.004	0.728	0.335
Sales Promotion Campaigns - Fuel Stations	2.33	1.09	0.552	-0.655
Sales Promotion Campaigns – Stores	2.31	0.92	0.517	-0.453
Sales Promotion Campaigns – Workshops	2.96	1.201	-0.061	-1.221
Sales Promotion Campaigns - Free Gifts	3.18	1.415	-0.09	-1.43
Sales Promotion Campaigns - Tour Packages	2.91	1.206	-0.017	-1.154
Sales Promotion Campaigns - Lucky Draws	2.76	1.217	0.09	-1.209
Training Programmes	3.42	1.272	-0.342	-1.049
Signboards Paintings Uniforms	2.82	1.203	0.033	-1.213
Loyalty Schemes	2.65	1.174	0.29	-0.945
Influence of Expert Mechanics	2.91	1.295	-0.038	-1.312
Influence of Salespersons	3.07	1.2	-0.278	-0.908
Std. Error of Skewness	0.322			
Std. Error of Kurtosis	0.634			

Table 5.60 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.590
Bartlett's Test of Sphericity	Approx. Chi-Square	520.361
	Df	171
	Sig.	.000

Table 5.61 Communalities

Variables	Initial	Extraction
Merchandising – Stores	1.000	.429
Advertisement - Posters	1.000	.636
Advertisement – Outdoor	1.000	.747
Advertisement – Newspapers	1.000	.748
Advertisement – Magazines	1.000	.629
Advertisement - FM Radio	1.000	.711
Advertisement – TV	1.000	.844
Advertisement – Online	1.000	.600
Sales Promotion Campaigns - Fuel Stations	1.000	.764
Sales Promotion Campaigns – Stores	1.000	.707
Sales Promotion Campaigns – Workshops	1.000	.610
Sales Promotion Campaigns - Free Gifts	1.000	.827
Sales Promotion Campaigns - Tour Packages	1.000	.797
Sales Promotion Campaigns - Lucky Draws	1.000	.717
Training Programmes	1.000	.801
Signboards Paintings Uniforms	1.000	.767
Loyalty Schemes	1.000	.618
Influence of Expert Mechanics	1.000	.612
Influence of Salespersons	1.000	.673

Results of the factor analysis are shown in Table 5.62, which shows five factors were extracted, accounting for 69.66% of the total variance explained.

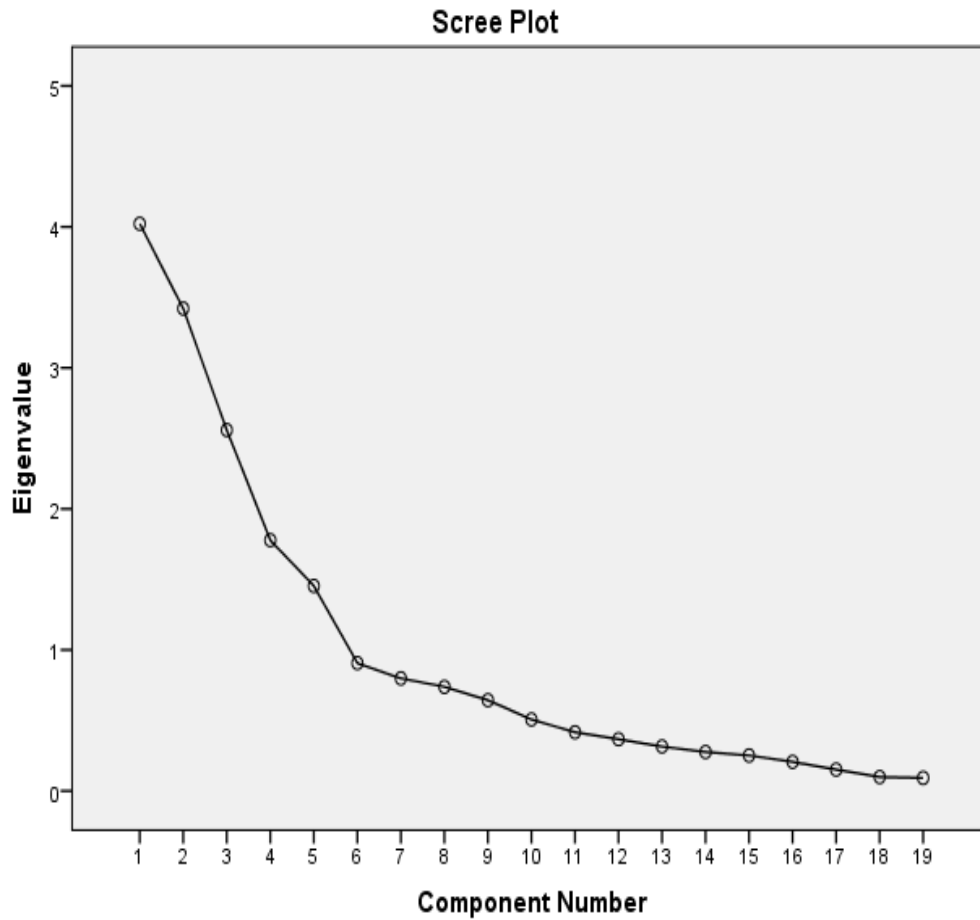
Table 5.62 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.022	21.171	21.171	4.022	21.171	21.171	3.597	18.930	18.930
2	3.421	18.004	39.175	3.421	18.004	39.175	2.737	14.404	33.334
3	2.559	13.470	52.645	2.559	13.470	52.645	2.551	13.425	46.759
4	1.778	9.359	62.005	1.778	9.359	62.005	2.266	11.926	58.685
5	1.454	7.653	69.657	1.454	7.653	69.657	2.085	10.973	69.657
6	.906	4.770	74.428						
7	.798	4.200	78.628						
8	.738	3.884	82.512						
9	.643	3.386	85.898						
10	.507	2.666	88.564						
11	.416	2.192	90.756						
12	.366	1.927	92.683						
13	.315	1.657	94.340						
14	.276	1.451	95.791						
15	.251	1.324	97.115						
16	.206	1.085	98.201						
17	.151	.794	98.995						
18	.099	.519	99.514						
19	.092	.486	100.00						

Extraction Method: Principal Component Analysis.

The Scree Plot is given in Fig.5.1 below, which shows 5 components above Eigenvalue of 1 and a distinct elbow at component no. 6.

Figure 5.1 Scree Plot



Factor loadings are correlation coefficients between the 19 observed variables and the 5 factors extracted. For finding out distinct factors, where each factor is heavily loaded on certain exclusive variables, orthogonal rotation was carried out. The factor loadings after performing orthogonal rotation are given in Table 5.63, wherein the largest factor loadings for each of the 19 variables are highlighted in bold figures.

Table 5.63 Rotated Component Matrix

Variables	1	2	3	4	5
Merchandising – Stores	.008	.651	.076	-.012	-.005
Advertisement - Posters	.001	.783	-.068	.001	.134
Advertisement – Outdoor	.079	.859	-.009	.020	.039
Advertisement – Newspapers	-.020	.045	.083	.851	-.121
Advertisement – Magazines	-.146	-.130	.429	.635	.058
Advertisement - FM Radio	.108	.819	-.157	.002	.062
Advertisement – TV	.067	.064	.114	.898	.128
Advertisement – Online	.054	-.164	.611	.372	.239
Sales Promotion Campaigns - Fuel Stations	-.014	.264	.009	.025	.833
Sales Promotion Campaigns – Stores	.144	.126	-.088	.052	.812
Sales Promotion Campaigns – Workshops	.175	-.133	.143	-.028	.735
Sales Promotion Campaigns - Free Gifts	.877	-.073	-.043	.160	.158
Sales Promotion Campaigns - Tour Packages	.863	-.137	-.130	.078	.097
Sales Promotion Campaigns - Lucky Draws	.818	.101	.135	-.113	-.083
Training Programmes	-.159	-.082	.867	.132	-.002
Signboards Paintings Uniforms	.813	.267	.151	.043	.098
Loyalty Schemes	.733	.111	-.073	-.202	.151
Influence of Expert Mechanics	.301	.115	.652	.289	-.014
Influence of Salespersons	-.005	-.008	.818	-.036	-.047

The variables were grouped under the five factors extracted, as per the largest factor loadings. Reliability of these five factors extracted was tested by Cronbach's alpha test, performed on the groups of variables under each factor. Cronbach's alpha value of 0.7 or greater is considered acceptable for the factor to be reliable (Hair et al., 2006). The outcome of Factor Analysis showing the Factor Loadings and Cronbach's alpha value are given in Table 5.64 below.

Table 5.64 Outcome of Factor Analysis

Factor	Variables	Factor Loadings	Cronbach's alpha
F1	Sales Promotion Campaigns - Free Gifts	.877	.887
	Sales Promotion Campaigns - Tour Packages	.863	
	Sales Promotion Campaigns - Lucky Draws	.818	
	Signboards Paintings Uniforms	.813	
	Loyalty Schemes	.733	
F2	Merchandising – Stores	.651	.802
	Advertisement – Posters	.783	
	Advertisement – Outdoor	.859	
	Advertisement - FM Radio	.819	
F3	Advertisement – Online	.611	.772
	Training Programmes	.867	
	Influence of Expert Mechanics	.652	
	Influence of Salespersons	.818	
F4	Advertisement – Newspapers	.851	.779
	Advertisement – Magazines	.635	
	Advertisement – TV	.898	
F5	Sales Promotion Campaigns - Fuel Stations	.833	.729
	Sales Promotion Campaigns – Stores	.812	
	Sales Promotion Campaigns – Workshops	.735	

Interpretation:

The five Factors or Latent Variables, influencing recommendations of two-wheeler mechanics have been labeled and they have been provided with brief definition as follows:

Factor 1: Personal Financial Benefits:

Mechanics are influenced by prospects of significant personal financial gains arising out of purchase by their customers in accordance with their recommendation. They stand to gain considerably from the lubricant marketing company by way of:

- free gifts and coupons with points redeemable in cash or kind
- loyalty schemes redeemable in cash or kind
- lucky draw coupons
- upgradation of their workshop

Factor 2: Mass Visibility Benefits:

Mechanics are influenced by prospects of safety in avoiding of risk of their customers' post purchase cognitive dissonance, by recommending a brand which enjoys good outdoor visibility and perceived wide spread usage. They seek comfort in their customers' willing acceptance of their recommendation as mass visibility of a low involvement product category brands creates brand familiarity and lowers customers' discomfort in acceptance. They give more importance to customer retention aided by good customer relationship.

Factor 3: Personal Esteem Benefits:

Mechanics are influenced by fulfilment of their esteem needs, nurturing their superior cognitive skills, continual updation of domain knowledge and deep sense of satisfaction arising out of a genuine desire to offer the most informed and technically sound recommendation to their customers.

Factor 4: Mass Awareness Benefits:

Mechanics are influenced by advertisements and tend to get attached to the brand. They are eager to connect with their consumers at the emotional level by recommendation based on current mass media advertisement.

Factor 5: Mass Engagement Benefits:

Mechanics are influenced engagement programmes conducted by lubricants marketers. They are genuinely eager to technically upgrade themselves, while not missing out on financial rewards. They capitalize on the opportunity to interact with officials of lubricants firms as well as the enhanced instant rewards that emanate out of sales promotional campaigns.

It is therefore evident that mechanics have varied factors influencing their recommendations. The most critical factors out of the five factors extracted are the first two factors namely Personal Financial Benefits and Mass Visibility Benefits, as they account for largest values of 21.17% and 18.00% of the total variance respectively.

5.3 SUMMARY OF RESEARCH FLOW WITH RESULTS

Summary of the research flow with test results is given in Table 5.65 below:

Table 5.65 Summary of Research Flow with Results

Sr. No.	Objective Number	Null Hypothesis Number and Hypothesis in brief	Question Number in Questionnaire for Users	Question Number in Questionnaire for Mechanics	Test Method	Test Result	Null Hypothesis Accepted/ Rejected
1	1	Not Applicable	1, 2	1A, 1B	Not Applicable	Not Applicable	Not Applicable
2	2	H ₀₁ : There is no difference in awareness levels on (a) product category, (b) availability and (C) benefits	8, 9, 11 to 14	Not Applicable	ANOVA	(a) 0.000, (b) 0.000 and (c) 0.000	(a), (b) and (c) Rejected
3	3	H ₀₂ : There is no difference in involvement levels.	5, 6, 7	Not Applicable	ANOVA	0.000	Rejected
4	3	H ₀₃ : There is no difference in interest levels.	10	Not Applicable	ANOVA	0.000	Rejected
5	4	H ₀₄ : There is no difference in (a) price sensitivity and (b) perception of greater value for money	15,16	Not Applicable	ANOVA	(a) 0.000 and (b) 0.000	Both (a) and (b) Rejected
6	4	H ₀₅ : There is no difference in vehicle characteristics (a) category, (b) age, (c) make and (d) engine cubic capacity	33	Not Applicable	CHI-SQUARE	(a) 0.034, (b) 0.000, (c) 0.425, (d) 0.001	(a), (b) and (d) Rejected, (c) Accepted

Table 5.65 (Continued) Summary of Research Flow with Results

Sr. No.	Objective Number	Null Hypothesis Number and Hypothesis in brief	Question Number in Questionnaire for Users	Question Number in Questionnaire for Mechanics	Test Method	Test Result	Null Hypothesis Accepted/ Rejected
7	4	H ₀₆ : There is no difference in demographic factors (a) age, (b) formal education, (c) gender, (d) marital status, (e) occupation and (f) family monthly take-home income	30, 31, 32, 34, 35, 36	Not Applicable	CHI-SQUARE	(a) 0.167, (b) 0.515, (c) 0.277, (d) 0.335 (e) 0.039, (f) 0.444	(a), (b), (c), (d) and (f) Accepted, (e) Rejected
8	4	H ₀₇ : There is no difference in consumer behaviour characteristics like (a) Customer Innovativeness, (b) Opinion Leadership, (c) Market Mavenism and (d) Two-Wheeler Enthusiasm	3, 4, 17, 18, 19, 20, 21, 22	Not Applicable	ANOVA	(a) 0.000, (b) 0.000, (c) 0.000 and (d) 0.000	(a), (b), (c) and (d) Rejected
9	4	H ₀₈ : There is no difference in effect advertisement (a) In-store display, (b) In-store posters, (c) Outdoor hoardings, (d) Newspaper advertisements, (e) Advertisement in Magazines, (f) FM Radio advertisements, (g) Television advertisements and (h) online advertisements	26	Not Applicable	ANOVA	(a) 0.456, (b) 0.188, (c) 0.312, (d) 0.302, (e) 0.153, (f) 0.126, (g) 0.290 and (h) 0.858	(a), (b), (c), (d), (e), (f), (g) and (h) Accepted

Table 5.65 (Continued) Summary of Research Flow with Results

Sr. No.	Objective Number	Null Hypothesis Number and Hypothesis in brief	Question Number in Questionnaire for Users	Question Number in Questionnaire for Mechanics	Test Method	Test Result	Null Hypothesis Accepted/ Rejected
10	4	H ₀₉ : There is no difference in effect of below the line promotional activities (a) sales campaigns at petrol pumps, (b) sales campaigns at shops, (c) discounts, (d) free gifts and (e) lucky draws	27	Not Applicable	ANOVA	(a) 0.044, (b) 0.909, (c) 0.287, (d) 0.004,	(a) and (d) Rejected, (b) and (c) Accepted
11	5	H ₀₁₀ : There is no difference in effect of marketplace influencers like (a) Innovative Customers, (b) Opinion Leaders, (c) Market Mavens, (d) Social, online media including blogs and product category influencers like (e) Motor Vehicle Mechanics and (f) Salespersons of Lubricants shops	28	Not Applicable	ANOVA	(a) 0.346 (b) 0.019, (c) 0.054, (d) 0.003, (e) 0.002 and (f) 0.009	(a) and (c) Accepted, (b), (d), (e) and (f) Rejected
12	3	H ₀₁₁ : There is no difference in satisfaction levels	24	Not Applicable	ANOVA	0.008	Rejected
13	3	H ₀₁₂ : There is no difference in brand loyalty	23, 25	Not Applicable	ANOVA	0.000	Rejected

Table 5.65 (Continued) Summary of Research Flow with Results

Sr. No.	Objective Number	Null Hypothesis Number and Hypothesis in brief	Question Number in Questionnaire for Users	Question Number in Questionnaire for Mechanics	Test Method	Test Result	Null Hypothesis Accepted/ Rejected
14	5	H ₀₁₃ : There is no difference in perception of mechanics, with regard to influence exerted over users, by recommendation of (a) mechanics themselves and (b) lubricant shop sales persons	Not Applicable	2, 3, 4	ANOVA	(a) 0.542 and (b) 0.189	(a) and (b) Accepted
15	2	H ₀₁₄ : There is no difference in awareness levels of mechanics	Not Applicable	5	ANOVA	0.789	Accepted
16	6	H ₀₁₅ : There is no difference in knowledge levels on lubricants and engine lubrication, of mechanics	Not Applicable	6, 7, 8, 9, 12	ANOVA	0.824	Accepted,
17	6	H ₀₁₆ : There is no difference in (a) Commercial Motive and (b) Opinion Leadership exhibited by mechanics	Not Applicable	10, 11, 13, 14	ANOVA	(a) 0.001 and (b) 0.048	(a) and (b) Rejected
18	6	Not Applicable	Not Applicable	15A to 15H, 16A to 16K, 17A to 17D	FACTOR ANALYSIS	5 Factors Extracted	Not Applicable

Detailed Hypotheses Test results are given in Appendix – VI.

CHAPTER 6: CONCLUSIONS

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The development of technological innovations, increase in living standards and disposable incomes, improvement of infrastructure, growth in economy and ease of commerce have created avenues for massive proliferation of business organisations in all categories of products and services. The modern business environment is rife with hyper competition amongst business firms. They are rapidly launching new, improved, differentiated and innovative products and solutions to retain their customers and attract prospective customers. Product lifecycles have shortened and so has decreased the ability of firms to continually rely on time tested standardized offerings of their products and services. Commercial organisations therefore find themselves in such a challenging state of volatile, uncertain, complex and ambiguous environment that they can survive and thrive only on the basis of successful marketing of innovations. The findings, conclusions and recommendations of this research study present significant insights for success in this area.

6.1 FINDINGS

This research is oriented towards the collective initiative of the lubricants industry, in its efforts of keeping pace with technological progress through launch and promotion of new innovative products. This research reveals to what extent they have succeeded in impacting the lives of people, to what extent they are in sync with consumer buying behaviour, how to rise above clutter, wipe away ignorance and disregard, what course of action in future can

harvest the best balanced results and how solutions should be presented for all to readily embrace and instill pride in all for being an integral part of a new unfolding story.

The findings of this research emanating from the hypotheses test results and factor analysis tests results are as follows:

6.1.1 This research reveals a low level of adoption and usage of synthetic lubricants, to the tune of only 17%. Given the large size of the total market, this indicates an enormous untapped potential and scope for rapid growth of the product category through enhanced adoption.

6.1.2 Awareness of the product category, its availability and its benefits is low but adopters showed higher levels than non-adopters. Awareness is one of the factors of adoption by a small segment of early adopters.

6.1.3 Involvement in the purchase process is moderate for majority, while adopters are highly involved and that they are innovators and early adopters (Rogers, 2003) of synthetic lubricants.

6.1.4 Adopters have higher levels of interest in acquiring greater knowledge on the lubricants than non-adopters.

6.1.5 Adopters are more aware of the initial higher prices and perceive the product as greater value for money compared to non-adopters.

6.1.6 Owners of recently purchased motorcycles having engines with higher cubic capacities displayed higher adoption.

6.1.7 Demographics characteristics like age, formal education, gender, marital status and family monthly take home income showed no difference in usage of synthetic lubricants and only the characteristic of occupation revealed significant difference, as self-employed individuals exhibited the highest adoption levels.

6.1.8 Adopters and users of synthetic lubricants exhibited significantly higher levels of consumer behaviour traits like: Customer Innovativeness, Opinion Leadership, Market Mavenism and Two-wheeler Enthusiasm

6.1.9 Advertisement through outdoor hoardings, newspaper, magazines, radio, television or online did not entice adoption. All the advertisements attempted to build brand affinity, conveying the benefit message as a declaration by voice over, or by a celebrity like cricketer or a film actor, or using a mechanic as a brand ambassador. Although some of them mentioned synthetic or semi-synthetic, the same was not significantly highlighted or differentiated enough for the target audience to take notice.

6.1.10 Below the line sales promotions campaigns namely sales campaigns at petrol pumps and free gifts have a significant effect on adoption of synthetic lubricants compared to other means like sales campaigns at lubricants shops, discounts and lucky draws.

6.1.11 Marketplace influencers like opinion leaders, social and online media, mechanics and salespersons of lubricant shops impacted adoption of synthetic

lubricants, whereas it is not so in the case of influencers like innovative customers and market mavens.

The above findings indicate that the domain does not invoke much discussion amongst social circles of individuals. Early adopters who are innovative customers and individuals with vast knowledge about the market who are market mavens have not widely shared information on and experience with synthetic lubricants. The same appears to be limited within a small circle of two-wheeler enthusiasts.

Opinion leaders are on the other hand, individuals who are sought for their knowledge and approached regularly for their views and guidance. This research conforms to this dimension of opinion leadership and finds them to have significant impact on adoption of synthetic lubricants. With increased access, users sought information on the internet, accessed blogs and comments on social media, which had a significant impact.

Mechanics and salespersons of lubricant shops had a significant impact on adoption and usage, which reflects the high regard accorded to them as purported experts in the domain, importance given to their advice and the willingness of users to accept recommendations of these marketplace influencers.

6.1.12 Satisfaction level is high for majority while for adopters of synthetic lubricants, it is higher, indicating lower reason for customers to switch.

6.1.13 Brand loyalty of adopters of synthetic lubricants is higher, which can be interpreted as higher trust in the brand offering. It also indicates upgradation of consumers from legacy products to new innovative products contingent upon well built levels of trust over a period of time.

6.1.14 Mechanics irrespective of their recommendatory preference for synthetic lubricants had similar perception on the influence exerted by them as well as that exerted by lubricants shop sales persons on vehicle users.

6.1.15 Mechanics irrespective of their recommendatory preference for synthetic lubricants had similar awareness levels regarding the product and brands.

6.1.16 Mechanics irrespective of their recommendatory preference for synthetic lubricants had similar knowledge levels regarding on properties and functioning of lubricants.

6.1.17 Mechanics with recommendatory preference for synthetic lubricants, exhibited higher commercial behavioural characteristics like commercial motive and opinion leadership.

6.1.18 Psychographic profiles of mechanics have been revealed by the five factors influencing their recommendations. These factors are Personal Financial Benefits, Mass Visibility Benefits, Personal Esteem Benefits, Mass Awareness Benefits and Mass Engagement Benefits. This builds on previous work of Nejad et.al. (2014) on diffusion mechanism and psychographic profiles, for identification of influentials and targeting them.

6.2 CONCLUSIONS

This research provides insights into the marketing mix strategies in choice of channel mix and promotion mix being used by lubricant marketing companies in the target market and the impact of these strategies on adoption and usage of synthetic lubricants by two-wheeler motor vehicle users.

The research studied the channel and promotion strategies in detail. The approach of the research was to report on collective strategies of all brands and not to differentiate between strategies of individual brands to study the collective impact of these strategies of industry members on the adoption and usage of a new product category.

The research acknowledges the pole position occupied by the authorised service stations of vehicle manufacturing companies, in terms of sales volumes of two-wheelers. The research however noted with regret the lack of opportunity for exercise of choice of brand of lubricant by the vehicle user, in this channel. This restriction of choice imposed by the vehicle manufacturer is supported by the fact that vehicle owners have also exhibited low involvement, awareness and interest in the past. The lubricant marketers have however lapped up to this opportunity of a large captive channel. They have forged techno commercial tie-ups with vehicle manufacturers to launch genuine oils, increasingly in synthetics and obtain exclusive or shared supply arrangements to their service network, with expected large sales volumes.

The marketing efforts of lubricants marketers in the recent past, ever since the industry has been deregulated by the Government of India, have created a huge impact amongst consumers. Lubricants marketers have developed a distribution network of distributors and retailers, popularly known as the bazaar channel. These are serviced through a network of storage depots or carrying and forwarding agents, which are in turn fed directly from the lubricant oil blending plants of lubricants firms.

They have recognized the importance of independent service stations where lubricant change takes place. As customers are in a position to exercise their choice at such workshops, lubricants marketers have gone all out to woo these independent workshops, by incentivizing them, making them visible in terms of branding through sign boards, painting, providing uniforms for their mechanics, providing training to mechanics and so on, to ensure a positive recommendation by mechanics.

The traditional channel of petrol pumps for the public sector oil marketers has also been revived and energized. Many channel partners in this channel are effectively competing with other channels for sales. Apart from over the counter sales, some of them have developed both on-site and off-site workshops. One integrated oil company has also developed authorised service station of a two-wheeler brand within their petrol pump premises, turning the channel into a hybrid physical channel. All the integrated oil marketing companies have started setting up oil change machines and oil change centers in their petrol pump premises where their two-wheeler customer footfalls are

high. This has again changed the character of the channel to a hybrid or product and service, resulting into increased sales.

The research did not find evidence of latest generation technologically evolved channels like online, tele-marketing, electronic commerce channels in this industry on a sustained basis. Development of omni channel, incorporating seamless integration of online channel with brick and mortar physical presence of channel outlets is yet to take off. The industry therefore continues to remain traditional in its channel strategies. No evidence was found of exclusivity or a special emphasis on synthetic lubricants in any particular channel. It can best be stated that lubricants marketers are yet to evolve a focused channel strategy for synthetic lubricants.

Lubricant marketers have been amongst the highest spenders of advertisement through outdoor media. Inter-firm rivalry in the industry is intense. This has prompted rapid learning to adapt to a highly competitive industry and carve out innovative promotion mix strategies in the most cost effective manner.

Advertisement campaigns on satellite television channels of sports, news and entertainment have been engaged into by most of the major brands in the industry. As these are expensive media properties, the campaigns have been conducted in multiple bursts over short duration each. Radio advertisement has also been intermittently carried out over short durations.

Outdoor media advertisement through hoardings, bill-boards, banners, gantries, arches, signboards and such other means have been most widely resorted to by lubricants marketers. The print media has been used sparingly.

A notable omission of the industry has been the lack of focus on conveying the launch of a new product category of synthetic lubricants. The industry failed in attracting the attention of the target population by superior emotional and informational advertisement appeal. It could not rise above the clutter to convey the new category cogently. It could not generate sufficient buzz to create awareness and develop interest to initiate adoption.

Below the line sales promotion campaigns have been enthusiastically carried out by almost all the brands in the industry. Free gifts have been great attention pullers instigating a switch to the campaigning brand. Lucky draws, in terms of coupons and scratch cards have also been popularized with reasonable success. Personal selling campaigns organized at workshops, shops and petrol pumps have also been opportunities to engage with customers to educate them and instill brand preference in them. Trade fairs, automotive fairs and agricultural fairs have also seen active participation by the industry.

All these promotional strategies have impacted the buying behaviour of consumers significantly. This research concludes that adoption of the new product category of synthetic lubricants for two-wheelers have been as a result of such multi-pronged strategies of lubricants marketers to such an extent to force a relook into certain commonly held beliefs about the product category.

The psychographics of adopters of synthetic lubricants are discussed next.

Adopters of synthetic lubricants exhibit significantly increased levels of awareness and interest. Lubricants are bracketed in marketing literature as a low involvement product category. This research concluded significantly higher level of involvement by adopters of synthetic lubricants. They have also exhibited significantly higher levels of price sensitivity and value for money. They have expressed higher customer satisfaction levels and exhibit higher brand loyalty.

Demographics of adopters are users of newer motorcycles with higher engine capacities and self-employed professionals and business persons.

Adopters are individuals who exhibit consumer behaviour traits of consumer innovativeness, opinion leadership, market mavenism and two-wheeler enthusiasm are the individuals who are most positively impacted by communications of lubricants marketers.

Adopters have also been significantly influenced by marketplace influencers like opinion leaders, mechanics and lubricant shop sales persons. These influencers in turn have been impacted by the various direct marketing communications, personal selling and promotional campaigns unleashed by lubricants marketers, specifically targeted at these intermediaries.

Mechanics of independent workshops are among the prime influencers of customers in their purchase decision on the type and brand of automotive lubricants and they are aware of this fact. This awareness of susceptible

customers alongwith the perception of trust they enjoy and expertise they display, imparts significant cogency in their commercial dealings with their customers. This research provides insight into the factors influencing these mechanics. Five factors have been extracted, which have been labeled as personal financial benefits, mass visibility benefits, personal esteem benefits, mass awareness benefits and mass engagement benefits. Each of these factors depicts a bundle of influences impacting the commercial recommendatory behaviour of mechanics.

This research therefore indirectly highlights the need for increased awareness and involvement of customers regarding automotive lubricants, as not all recommendations of mechanics are in the best interests of the customer. A large segment of vehicle owners prefer to use services of non-franchised independent mechanics. It is therefore imperative that these mechanics are properly trained, regularly updated and that it is ensured that they use spares, consumables and lubricants of proper specifications. This can be ensured to a large extent by well informed and vigilant customers.

6.3 RECOMMENDATIONS

Awareness being the first step in adoption process, followed by interest, the prevailing low levels of awareness and interest amongst the prospective customers at large does not support rapid adoption. Lubricants marketers are recommended to thoroughly overhaul their marketing communication content by differentiating synthetic lubricants from mineral oil based lubricants.

Domain knowledge of both users and mechanics of two-wheelers, on lubrication process and lubricant products, is a prime pre-requisite to appreciating the superiority of the new product category, following which the expected change in purchase behaviour is displayed. Marketers are therefore recommended to rapidly create a conducive environment where domain knowledge is actively sought and accessible to the target segment.

The concepts of value for money or the total cost of ownership of the product over its life cycle play a decisive role in cognitive purchase decisions on high value products. Low adoption of synthetic lubricants arises from aversion to the initial higher purchase price. Marketers are recommended to devise communication strategies to induce a change in the customers' cognitive process to accord due credence to long terms benefits of extended oil drain intervals, lower vehicle down time and lower expenses on maintenance and replacement of spare parts, which over-weigh the pain of initial high price.

Involvement of two-wheeler users in lubricant purchase process is divergent, with adopters exhibiting high involvement levels and non-adopters exhibiting low involvement levels. Surrogate involvement in the product category is achieved in the case of individuals emotionally attached to their high performance motorcycles. With rising living standards, disposable income and penchant for achieving an icon status in their social circle, two-wheeler users are expected to migrate to high end vehicles, which will fuel their involvement levels and lead to higher usage of synthetic lubricants. Lubricant marketers are

recommended to align their offerings in line with the technical requirements of higher performance two-wheelers and obtain genuine oil tie ups.

With increasing sophistication of engine technology, maintenance of vehicles is expected to shift from unbranded, non-affiliated independent workshops to vehicle manufacturing company authorized service stations. Lubricant marketers are recommended to align their channel strategies to increase their exposure to this channel. Service as a component in any composite offering is often a differentiating factor to gain repeat sales. Rapid expansion of mechanized oil change service at petrol pumps and quick oil change centers is also recommended, in order to yield positive results to lubricants marketers.

Lubricant sale, in India, currently happens through physical channels only while preliminary presence has been registered in e-commerce portals of online retailers, which is expected to grow, in keeping with the trend seen in fast moving consumer goods. The trend of omni channel exposure is also expected to catch up with physical channels for look and feel, online portals for convenient and economical purchase transaction, doorstep delivery from physical network followed by rendering the service of changing oil at a convenient location and time. Marketers are recommended to gear up launch of such a seamless experience to customers to capture greater mindshare leading to enhanced market share.

Advertisement in the electronic, print and outdoor media have not succeeded much in evoking migration towards usage of the product category. The content

of most of the advertisements were limited to functional aspects of the product without a clear communication regarding a category changing innovative product introduction with a quantum jump in benefits and value for money. The advertisements had little emotional or catchy aspirational status content to rise above clutter and grab the attention of the target audience. Marketers are recommended to rectify this lacuna by imparting greater emotional appeal.

Below the line sales promotion campaigns have been most effective in initiating a trial purchase. Lubricants marketers have been excelling in their innovative approaches with varied promotional offers, tweaked and altered from time to time and attractive incentives for both their channel partners as well as end customers. Further personal selling interactions with the target audience at fairs, road shows and sales campaigns, have proven to be a highly effective means for convincing prospects and achieving a trial purchase, as the communication by a seasoned seller is customised at the spur of the moment and balances the type, quality, depth and extent of information to be shared to reduce uncertainty and dissonance in the customer's mind. Lubricants marketers are therefore recommended to modify their promotion mix heavily in favour of below the line sales promotional campaigns.

As marketplace influencers and social network influencers exert decisive influence over lubricant purchase decisions, lubricants marketers are recommended to increase their engagement with these influencers to ensure their continued positive recommendations and counter negative word of mouth publicity. Individuals qualifying as innovative customers, opinion leaders,

market mavens and two-wheeler enthusiasts share their interests, expertise, domain information and brand experiences on social media, domain specific social websites, special interest group portals and blogs. In view of the increasing prices of lubricants and conflicting recommendations of mechanics and lubricants shop salespersons, accentuated by their own limited domain knowledge, facilitated by widespread access to mobile internet, two-wheeler users are increasingly going online for seeking expert advice on lubricants, in addition to word of mouth publicity by social influencers. Lubricants marketers therefore should be on their toes to put processes in place to continually scan the internet for brand experience exchanges and should chip in with alacrity to provide open, honest and complete declaration on any query, observation, comment or expression of service deficiency.

In spite of all the direct marketing communication strategies of lubricants marketers, which serves limited purpose in a low involvement product category like automotive lubricants, two-wheeler users generally do not exhibit purchase behaviour directly related to brand awareness. A major chunk of two-wheeler users are expected to continue to rely on their neighbourhood mechanics of independent workshops for maintenance and lubrication services of their vehicles and these mechanics have been observed to largely usurp the decision making, as strong influencers since they are perceived to be experts in their domain. Lubricants marketers are therefore recommended to focus their marketing strategies on influencing these influencers of automotive lubricants customers. Marketers engaged in designing promotional mix are

well advised to segment mechanics based on the five factors extracted, which indicate their psychographic profile, governing their recommendatory behaviour. They should thereafter design and deliver customised promotions appealing to needs of each of these segments.

6.4 CONTRIBUTIONS

This research contributes significantly to the body of knowledge in the domain of marketing of innovative low involvement category products.

It has probed the very foundation of our commonly accepted inclusion of automotive lubricants in the segment of low involvement category products, as is evident from extant literature on marketing management. A niche segment of early adopters of the product category of synthetic lubricants have exhibited high levels of awareness, interest and involvement. This is one of the most significant contributions of this research. This enriches our knowledge by unearthing the hitherto unexplored customer segment.

This research unearths existence of continuum within the broad product category, where significant differentiation in consumer attitudes is exhibited, in terms of decision swings favouring opposite poles along the emotional and logical considerations. Emotional attachment with the equipment is related to pride and status enjoyed by display of ownership of a product. Hence a high quantum of decisions to ensure their upkeep originates with an overdose of emotional content. Owners of new and high performance commuting motor

cycles have displayed such behaviour with regard to their lubricants usage, which borders on the emotional extreme.

The demographic characteristic of nature of occupation as an important factor in adoption behaviour is one of the important contributions of this research. Self-employed professionals and business persons have differentiated themselves from service class individuals in terms of their purchase behaviour. Extant marketing literature hitherto gave cognizance to factors like age, education, wealth, culture and so on, in the study of consumer behaviour. This research throws up an important factor of occupation as an important contributing factor.

Research on consumer behaviour constructs has not gained popularity in India. An important contribution of this research has been the development of a new construct of two-wheeler enthusiast comprising of several constituent dimensions, out of which two dimensions are most important. Alongside this newly developed construct, this research has tested the constructs of innovative customers, opinion leaders and market mavens. All of these four constructs stood out in this research as distinctly identifiable by their differentiated domain specific purchase behaviour.

This research goes deep into the all the modes of promotion mix deployed by lubricants marketers encompassing both above the line and below the line promotion in various media and records the extent of self-designated influence

levels as perceived by consumers. This research provides a comparative score of the influencing effect of various modes of promotion.

Whereas advertisement and sales promotion are means of direct communication by marketers with the target audience, communication of independent channel intermediaries and marketplace influencers with prospective customers, also constitute an indirect communication by marketers, resulting from the impact they create on intermediaries and influencers. The conclusion that opinion leaders, from amongst the social circle of consumers, plays the critical role of marketplace influence to promote adoption of new and innovative products in this product category, is a significant contribution of this research.

Several researches in the past had reported finding that mechanics play an important influencing role in the lubricant purchase decision of vehicle users. This research contributes to the body of marketing knowledge by not only just confirming the finding but also probing further and extracting the factors behind the recommendatory behaviour of mechanics based on the influence of promotional strategies of lubricants marketers. The research extends the sources of influence to include lubricants shop salespersons as a class of influencers who also wield significant influence.

6.5 LIMITATIONS

Based on the research methodology adopted, the following may be stated as limitations of the research study:

- 6.4.1 It is limited to only 4-stroke petrol engine two-wheeler motor vehicle users in only four urban markets namely Pune, Nashik, Aurangabad and Solapur in the state of Maharashtra in India.
- 6.4.2 It is limited to users who are in a position to exercise their choice in purchase of the type and brand of lubricant and therefore may not be representative of buying behaviour with respect to choice of channel.
- 6.4.3 It is limited to the usage of a particular product category and does not include related product categories like spares, accessories, consumables, or unrelated product categories in low involvement or high involvement categories for a comparative study across product categories or involvement categories.
- 6.4.4 It is limited to the category of privately owned personal mobility vehicles as two-wheelers are generally not owned for commercial usage. This negates the possibility of a comparative study.
- 6.4.5 It is limited to adoption and usage of a new product category compared to a conventional product category and does not analyze brand preference within the category.

6.6 SCOPE FOR FUTURE RESEARCH

Whereas the current research provided answers to the research questions, there exists scope for future research in the domain of impact of marketing

strategies of marketers on adoption and usage of new innovative product categories as follows:

6.5.1 Future research can extend to:

- other market classes like semi-urban and rural areas,
- other geographies like different states and countries,
- localities with wide variations in their socio-economic profile,
- vehicles of all categories in addition to two-wheelers,
- comparison between usage in vehicles for personal mobility and those for commercial usage,
- all types of lubricants like engine oils, gear oils, transmission oils, power steering oils, hydraulic oils, greases, fuel additives, radiator coolants and brake fluids used in different categories of vehicles and
- all types of other consumable products requiring periodic replacement in vehicles like tyres, batteries, spares and accessories.

6.5.2 Future research may incorporate the following additional factors which are expected to change over time:

- expected increase in awareness of consumers regarding new innovative product categories,
- change in involvement due to increase in product complexity, durability, performance and price,
- change in consumer exposure to social and online media due to wider access through improved internet connectivity,

- change in income levels, disposable income and affluence,
- change in preference of vehicle users in terms of patronage of branded servicing network or independent workshops, due to increased sophistication in engine technology.

6.5.3 Future research may develop new constructs to better reflect evolution of marketing with changes in lifestyle, as follows:

- propensity of consumers towards opportunities of co-creation of innovative solutions by marketers,
- emotional and enthusiastic affiliation to a brand community of companies with sustainable management practices incorporating performance on the triple bottom line of profit, planet and people to improve economic, environmental and social impact on society.

6.5.4 Further research may be conducted on recommendatory behaviour of market influencers to extend this study to the cover service categories like medical, legal, education, maintenance, investment, travel services and so on, where customers need to trust and rely on their influencers.

APPENDICES

APPENDIX – I BIBLIOGRAPHY

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APPENDIX – II Questionnaire – Pilot Survey of Users

		S.No.	Location :		Date & Time :	
Survey on Usage of Synthetic Lubricants For Two Wheeler Motor Vehicles						
Dear Respondent, I am carrying out research on usage of Synthetic Lubricants for two wheeler motor vehicles. I shall appreciate your valued opinion and request you to kindly respond to this questionnaire. The information provided will be held confidential and will be used for academic purposes only. Debanjan Saha, Research Scholar ICFAI University						
<i>Please put a tick (✓) mark in the box that reflects your choice :</i>						
1	Statement	Choice				
A	Type of 4-stroke (4T) engine oil that I have purchased just now for my Two Wheeler Motor Vehicle.	Synthetic (including semi-synthetic)			Normal (mineral oil based)	
B	Brand of 4T engine oil that I have purchased just now for my Two Wheeler Motor Vehicle.	Servo	HP	MAK	Veedol	Gulf
		Castrol	Mobil	Shell	Elf	Other
<i>Please read the following statements and relate them to your actual nature and actual events in the recent past. Please put tick (✓) mark in the option (only one) that is the best fit, for each of the following statements:</i>						
2	Statement	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
A	I am emotionally very attached to my two wheeler.	1	2	3	4	5
B	I derive great pleasure in riding my two wheeler.	1	2	3	4	5
C	I take keen interest in knowing about latest developments on two wheelers	1	2	3	4	5
D	I like reading magazines on two wheelers.	1	2	3	4	5
E	I avoid looking at newspaper advertisements of two wheelers.	1	2	3	4	5
F	I do not visit websites having information about two wheelers	1	2	3	4	5
G	During the last six months, servicing of my two wheeler has often been delayed.	1	2	3	4	5
<i>Please first read all the following 5 statements. Please recollect the events during oil change of your two wheeler, last time and this time. Please then put tick (✓) mark in the option (only one) that best fits the actual events, for each of the following statements :</i>						
3	Statement	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
A	I am very particular about which 4T oil to use in my two wheeler.	1	2	3	4	5
B	I do not bother which 4T engine oil is being put in my two wheeler by my mechanic.	1	2	3	4	5
C	I myself decide the brand of 4T oil for oil change of my two wheeler.	1	2	3	4	5
D	I always follow my mechanic's recommendation for choice of 4T engine oil.	1	2	3	4	5
E	I take advice of the lubricants shop salesperson on choosing the brand of 4T engine oil.	1	2	3	4	5

Please read the following statements and put tick (✓) mark in the option (only one) that best fits your opinion, for each of the following statements :

	Statement	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
4	Till today, I was not aware of synthetic 4T oil for two wheelers.	1	2	3	4	5
5	I may have seen advertisements on synthetic 4T oils, but I have not paid attention to them.	1	2	3	4	5
6	I have come to know today that synthetic 4T oils are available in my local market.	1	2	3	4	5
7	I do not remember having seen synthetic 4T oils displayed in any shop or petrol pump.	1	2	3	4	5
8	I wish to know more about benefits of using synthetic 4T engine oils	1	2	3	4	5
9	I think synthetic 4T oils give better protection to the engine of two wheelers than normal 4T oils.	1	2	3	4	5
10	I think synthetic 4T oils improve engine performance of two wheelers.	1	2	3	4	5
11	I think synthetic 4T oils need to be changed after much longer kilometer running than normal 4T oils.	1	2	3	4	5
12	I think synthetic 4T oils cause lesser smoke emission and are thus environment friendly.	1	2	3	4	5
13	I feel that initial purchase price of synthetic oils is very high compared to normal 4T oils	1	2	3	4	5
14	I think that as oil change period for synthetic oils is far more than normal engine oils, I get an overall cost benefit advantage over a longer period of time by usage of synthetic lubricants.	1	2	3	4	5
15	I think that as oil change period for synthetic oils is far more than normal engine oils, I can save my money by lesser visits to mechanic (in a year) for oil change of my two wheeler.	1	2	3	4	5
16	I feel that using synthetic 4T oils instead of normal 4T oils is a waste of my money as synthetic oils do not provide me more benefits than normal 4T oils.	1	2	3	4	5
17	I take keen interest in the different brands of 4T oils displayed in petrol pumps and lubricants shops.	1	2	3	4	5
18	When I discuss about two wheelers with my friends, I give them more information than what they give me.	1	2	3	4	5
19	I often try to convince my friends to use the brand of engine oil for two wheeler motor vehicle of my choice.	1	2	3	4	5
20	My friends consider me to be a good source of information on taking care for two wheelers	1	2	3	4	5
21	My friends often take advice from me on which engine oil to use for their two wheeler.	1	2	3	4	5
22	I often take advice from my friends on which engine oil to use in my two wheeler.	1	2	3	4	5
23	I greatly enjoy being the first in my social circle to buy new technology products.	1	2	3	4	5
24	I enjoy taking calculated risks in buying new technology products.	1	2	3	4	5
25	I enjoy providing information to my friends about new products.	1	2	3	4	5

Please read the following statements and put tick (✓) mark in the option that best fits your opinion, for each of the following statements :

	Statement	Yes	No	Don't Know		
26	I had purchased the same 4T oil earlier also (that I have purchased now) for my two wheeler :					
A	This time and last time					
B	This time and last 2 times					
C	This time and more than last 2 times					
27	I have carried out oil change of my two wheeler at the same mechanic :					
A	This time and last time					
B	This time and last 2 times					
C	This time and more than last 2 times					

Please read the following statements and put tick (✓) mark in the option that best fits your opinion, for each of the following statements :

	Statement	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
28	I am not satisfied with the 4T oil I am using for my two wheeler.	1	2	3	4	5
29	I am not willing to try new high performance 4T oils from any other brand than the one I have been using for my two wheeler.	1	2	3	4	5

Please first read all the alternatives in each of the following 3 statements. Please recollect the events during oil change of your two wheeler, last time and this time. Please then put tick (✓) mark in the option that best fits the actual events, for each of the following statements :

	Statement	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
30	I have chosen the present 4T oil mainly due to :					
A	Attractive display in shops	1	2	3	4	5
B	Attractive posters in shops	1	2	3	4	5
C	Hoardings on roadside	1	2	3	4	5
D	Advertisements in newspapers	1	2	3	4	5
E	Advertisements in magazines	1	2	3	4	5
F	Advertisements on FM radio	1	2	3	4	5
G	Advertisements on TV	1	2	3	4	5
H	Advertisements on websites	1	2	3	4	5
31	I have selected this 4T oil because of the following :					
A	Sales Campaign at petrol pumps	1	2	3	4	5
B	Sales Campaign at lubricant shops	1	2	3	4	5
C	High discounts received	1	2	3	4	5
D	Free gifts received	1	2	3	4	5
E	Lucky draw event	1	2	3	4	5
32	I have chosen the present 4T oil mainly due to :					
A	To try out a new brand and type of 4T oil	1	2	3	4	5
B	Advice by a friend who has used this 4T oil in his two wheeler.	1	2	3	4	5
C	Advice by a friend who is more knowledgeable than me in this field.	1	2	3	4	5
D	Advice of experts on websites, blogs, social network.	1	2	3	4	5
E	Advice by my mechanic.	1	2	3	4	5
F	Advice of shop salesperson.	1	2	3	4	5

Thank you for sparing your valuable time in completing this questionnaire. You are now eligible for participation in a lucky draw. There are prizes for 3 lucky winners. We wish you All the Best for the Lucky Draw. As you may become one of the winners, please help us to reach you, by providing the following information about yourself and please tick(?) the appropriate box in each of the following:

33	Name :						
34	Gender :	Male	Female	Transgender			
35	Age :	Less than 25 yrs	25 yrs to less than 35 yrs	35 yrs to less than 45 yrs	45 yrs and above		
36	Marital Status :	Single	Married				
37							
A	Two Wheeler Type:	Motorcycle		Scooter	Moped		
B	Two Wheeler Make/Model:	Make :		Model :		Year of mfg:	
C	Two Wheeler Engine CC:	Less than 125 cc	125 cc to less than 175 cc	175 cc to less than 250 cc	250 cc to less than 500 cc	500 cc or more	
38	Occupation:	Student	Service	Self employed - professional	Self employed - business		
39	Educational qualification :	Under Graduate	Graduate	Post Graduate and above.			
40	Family monthly take-home income :	Less than ` 15,000/-	` 15,000/- to less than ` 30,000/-	` 30,000/- to less than ` 50,000/-	` 50,000/- to less than ` 75,000/-	More than ` 75,000/-	
<p>Thank you once again. To register for the said Lucky Draw, please SMS the Serial Number of this Questionnaire to 9920011490</p>							
	SMS sent	Yes	No				
				Signature			

APPENDIX – III Questionnaire – Final Survey of Users

		S.No.	Location :		Date & Time :	
Survey on Usage of Synthetic Lubricants For Two Wheeler Motor Vehicles						
Dear Respondent,						
I am carrying out research on usage of Synthetic Lubricants for two wheeler motor vehicles. I shall appreciate your valued opinion and request you to kindly respond to this questionnaire. The information provided will be held confidential and will be used for academic purposes only.						
Debanjan Saha, Research Scholar ICFAI University						
<i>Please put a tick (✓) mark in the box that reflects your choice :</i>						
	Statement	Choice				
1	Type of 4-stroke (4T) engine oil that I have purchased just now for my two wheeler motor vehicle.	Synthetic (including semi-synthetic)			Normal (mineral oil based)	
2	Brand of 4T engine oil that I have purchased just now for my two wheeler motor vehicle.	Servo	HP	MAK	Veedol	Gulf
		Castrol	Mobil	Shell	Elf	Other
<i>Please read the following statements and relate them to your actual nature. Please put tick (✓) mark in the</i>						
	Statement	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
3	I am emotionally very attached to my two wheeler motor vehicle.	1	2	3	4	5
4	I derive great pleasure in going on long trips, riding my two wheeler motor vehicle.	1	2	3	4	5
5	I do not care which particular 4T engine oil is put in my two wheeler by my mechanic.	1	2	3	4	5
6	I am very particular about which 4T oil to use in my two wheeler.	1	2	3	4	5
7	I buy whichever 4T oil for my two wheeler, which my mechanic or lubricants shop salesperson advises.	1	2	3	4	5
8	Till today, I was not aware of the new type of oil for two wheelers called synthetic 4T oil.	1	2	3	4	5
9	I do not remember having seen synthetic 4T oils displayed in any local shop or petrol pump.	1	2	3	4	5
10	I wish to know more about benefits of using synthetic 4T engine oils.	1	2	3	4	5
11	I think synthetic 4T oils give better protection to the engine of two wheelers than normal 4T oils.	1	2	3	4	5
12	I think synthetic 4T oils improve engine performance of two wheelers.	1	2	3	4	5
13	I think synthetic 4T oils need to be changed after much longer kilometers running than normal 4T oils.	1	2	3	4	5
14	I think synthetic 4T oils cause lesser smoke emission and are thus environment friendly.	1	2	3	4	5
15	I don't mind paying more to purchase newly launched synthetic 4T oils which are more expensive than normal 4T oils.	1	2	3	4	5
16	I think that as oil change period for synthetic oils is far more than normal engine oils, I get an overall cost benefit advantage over a longer period of time by usage of synthetic lubricants.	1	2	3	4	5

Please read the following statements and put tick (✓) mark in the option (only one) that best fits your opinion, for each of the following statements :

	Statement	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
17	I greatly enjoy being the first in my social circle to buy new technology products.	1	2	3	4	5
18	I enjoy taking calculated risks in buying new technology products.	1	2	3	4	5
19	My friends consider me to be a good source of information on new products, shops or workshops regarding maintenance and care of two wheelers.	1	2	3	4	5
20	I enjoy providing information to my friends about new brands and different kinds of products.	1	2	3	4	5
21	I often try to convince my friends to use the engine oil that I like, for their two wheeler.	1	2	3	4	5
22	My friends value my advice on choosing which engine oil to use in their two wheeler.	1	2	3	4	5
23	I have used the same brand and type of 4T oil several times earlier.	1	2	3	4	5
24	I am not satisfied with the 4T oil I am using for my two wheeler.	1	2	3	4	5
25	As I like the brand and type of 4T oil I am now using, I will continue to use the same for my two wheeler.	1	2	3	4	5

Please first read all the alternatives in each of the following 3 statements. Please recollect the events during oil change of your two wheeler, last time and this time. Please then put tick (✓) mark in the option that best fits the actual events, for each of the following statements :

	Statement	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
26	I have chosen the present 4T oil mainly due to :					
A	Attractive display in shops	1	2	3	4	5
B	Attractive posters in shops	1	2	3	4	5
C	Hoardings on roadside	1	2	3	4	5
D	Advertisements in newspapers	1	2	3	4	5
E	Advertisements in magazines	1	2	3	4	5
F	Advertisements on FM radio	1	2	3	4	5
G	Advertisements on TV	1	2	3	4	5
H	Advertisements on websites	1	2	3	4	5
27	I have selected this 4T oil because of the following :					
A	Sales Campaign at petrol pumps	1	2	3	4	5
B	Sales Campaign at lubricant shops	1	2	3	4	5
C	High discounts received	1	2	3	4	5
D	Free gifts received	1	2	3	4	5
E	Lucky draw event	1	2	3	4	5
28	I have chosen the present 4T oil mainly due to :					
A	Advice by a friend who has good knowledge about new products regarding care of two wheelers.	1	2	3	4	5
B	Advice by a friend who is highly satisfied in using this brand and type of 4T oil.	1	2	3	4	5
C	Advice by a friend who has good knowledge about lubricant shops or two wheeler workshops	1	2	3	4	5
D	Advice of experts on websites, blogs, social network.	1	2	3	4	5
E	Advice by my mechanic.	1	2	3	4	5
F	Advice of shop salesperson.	1	2	3	4	5

Thank you for sparing your valuable time in completing this questionnaire. You are now eligible for participation in a lucky draw. There are prizes for 3 lucky winners. We wish you All the Best for the Lucky Draw. As you may become one of the winners, please help us to reach you, by providing the following information about yourself and please tick (?) the appropriate box in each of the following:

29	Name :						
30	Gender :	Male	Female	Transgender			
31	Age :	Less than 25 yrs	25 yrs to less than 35 yrs	35 yrs to less than 45 yrs	45 yrs and above		
32	Marital Status :	Single	Married				
33							
A	Two Wheeler Type:	Motorcycle		Scooter	Moped		
B	Two Wheeler Make/Model:	Make :		Model :		Year of Manufacture:	
C	Two Wheeler Engine CC:	Less than 125 cc	125 cc to less than 175 cc	175 cc to less than 250 cc	250 cc to less than 500 cc	500 cc or more	
34	Occupation:	Student	Service	Self employed - professional	Self employed - business		
35	Educational Qualification :	Under Graduate	Graduate	Post Graduate and above.			
36	Family Monthly Take-Home Income :	Less than ` 15,000/-	` 15,000/- to less than ` 30,000/-	` 30,000/- to less than ` 50,000/-	` 50,000/- to less than ` 75,000/-	More than ` 75,000/-	
<p>Thank you once again. To register for the said Lucky Draw, please SMS the Serial Number of this Questionnaire to 9920011490.</p>							
	SMS sent	Yes	No				
				Signature			

APPENDIX – IV Questionnaire – Final Survey of Mechanics

		S.No.	Location :		Date & Time :	
Survey on Usage of Synthetic Lubricants For Two Wheeler Motor Vehicles - Mechanics						
Dear Respondent,						
I am carrying out research on usage of Synthetic Lubricants for two wheeler motor vehicles. I shall appreciate your valued opinion and request you to kindly respond to this questionnaire.						
<i>Please put a tick (✓) mark in the box that reflects your choice of the 4T oil you have purchased now :</i>						
1	Statement	Choice				
	I recommend the following for my Two Wheeler Motor Vehicle customers:					
A	Type of 4T engine oil.	Synthetic (including semi-synthetic)			Normal (mineral oil based)	
B	Brand of 4T engine oil.	Servo	HP	MAK	Veedol	Gulf
		Castrol	Mobil	Shell	Elf	Other
<i>Please read the following statements and put tick (✓) mark in the option that best fits your opinion, for each of the following statements :</i>						
	Statement	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
2	I normally advise all my customers which 4T oil they should use in their two wheeler.	1	2	3	4	5
3	My customers often do not take my advice and decide the brand of 4T oil to use in their Two Wheeler.	1	2	3	4	5
4	My customers take advice of the lubricants shop salesperson on choosing the brand of 4T engine oil.	1	2	3	4	5
5	Till today, I was not aware that synthetic 4T oil for two wheelers are available in the local market.	1	2	3	4	5
6	I wish to know more about benefits of using synthetic 4T engine oils	1	2	3	4	5
7	I think synthetic 4T oils give better protection to the engine of two wheelers than normal 4T oils.	1	2	3	4	5
8	I think synthetic 4T oils improve engine performance of two wheelers.	1	2	3	4	5
9	I feel oil change period for synthetic 4T oils in two wheelers is much more than normal 4T oils.	1	2	3	4	5
10	I feel that there will be loss of my income by advising customers to use synthetic 4T oils, as these customers will need to visit my workshop less frequently.	1	2	3	4	5
11	I feel that there will be increase of my income by advising customers to use synthetic 4T oils, as more customers will visit to my workshop.	1	2	3	4	5
12	Using synthetic 4T oils instead of normal 4T oils is a waste of money as I feel that synthetic 4T oils do not provide more benefits than normal 4T oils.	1	2	3	4	5
13	When I discuss about two wheelers with other mechanics, I give them more information than what they give me.	1	2	3	4	5
14	I often try to convince other mechanics to use the brand of engine oil for two wheeler motor vehicle of my choice.	1	2	3	4	5

Please first read all the alternatives in each of the following 3 statements. Please then put tick(✓) mark in the option that best fits the actual events, for each of the following statements :

	Statement	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
15	I have chosen to recommend the Type and Brand of 4T oil mainly due to :					
A	Attractive display in shops	1	2	3	4	5
B	Attractive posters in shops	1	2	3	4	5
C	Hoardings on roadside	1	2	3	4	5
D	Advertisements in newspapers	1	2	3	4	5
E	Advertisements in magazines	1	2	3	4	5
F	Advertisements on FM radio	1	2	3	4	5
G	Advertisements on TV	1	2	3	4	5
H	Advertisements on websites	1	2	3	4	5
16	I have chosen to recommend the Type and Brand of 4T oil due to the following activities by the Lubes company :					
A	Sales Campaign at nearby petrol pumps	1	2	3	4	5
B	Sales Campaign at nearby lubricant shops	1	2	3	4	5
C	Sales Campaign at our workshops	1	2	3	4	5
D	Good incentive schemes - free gifts	1	2	3	4	5
E	Good incentive schemes - free tours	1	2	3	4	5
F	Good incentive schemes - lucky draw.	1	2	3	4	5
G	Training Programmes	1	2	3	4	5
H	Certificate of training	1	2	3	4	5
I	Signboard, wall/shutter painting, uniform	1	2	3	4	5
K	Agreement - Loyalty scheme	1	2	3	4	5
17	I have chosen to recommend the Type and Brand of 4T oil mainly due to :					
A	Advice by a friend who has used this 4T oil in his two wheeler.	1	2	3	4	5
B	Advice by a friend who is more knowledgeable than me in this field.	1	2	3	4	5
C	Advice of expert mechanics	1	2	3	4	5
D	Advice of company/distributor/shop salesperson.	1	2	3	4	5

We thank you for sparing your valuable time in completing this questionnaire. You are now eligible for participation in a lucky draw. There are prizes for 3 lucky winners. We wish you All the Best for the Lucky Draw. As you may become one of the winners, please help us to reach you, by providing the following information :

18	My name :						
19	My workshop :						
20	My mobile no.:						
21	My age :	Less than 25 yrs	25 yrs to less than 35 yrs	35 yrs to less than 45 yrs	45 yrs and above		
22	Your Experience :	Less than 1 yr	1 yr to less than 5 yrs	5 yrs to less than 10 yrs	10 yrs and above		
23	Average number of vehicles serviced in a month	Motorcycle with engine cc :					
		Less than 125 cc	125 cc to less than 175 cc	175 cc to less than 250 cc	250 cc to less than 500 cc	500 cc or more	
		Scooter	Moped				
<p>Thank you once again. To register for the Lucky Draw, please SMS the Serial Number of this Questionnaire to 9920011490</p>							
		Yes	No				
	SMS sent						
						Signature of Respondent	
	Debanjan Saha						

APPENDIX – V Specifications of 4-stroke lubricants

Requirements for API Service Category SH by Viscosity Grade

Engine Test Requirements ^a - All Viscosity Grades			
Sequence IID			Pass
Sequence IIIE			Pass
Sequence VE			Pass
L-38			Pass
Bench Test and Measured Parameter	Viscosity Grade Performance Criteria ^b		
	SAE 5W-30	SAE 10W-30	SAE 15W-40
Test Method D5800 volatility loss, % max ^c	25	20	18
Test Method D2887 volatility loss at 371°C (700°F), % max ^c	20	17	15
EOFTd, % flow reduction, max	50	50	NR
Test Method D4951 or D5185, phosphorus % mass, max.	0.12	0.12	NR
Test Method D92 flash point, °C, min ^e	200	205	215
Test Method D93 flash point, °C, min ^e	185	190	200
Test Method D892 foaming tendency (Option A)			
Sequence I, max, foaming/settling ^f	10/0	10/0	10/0
Sequence II, max, foaming/settling ^f	50/0	50/0	50/0
Sequence III, max, foaming/settling ^f	10/0	10/0	10/0
Test Method D6082 ^g	Report	Report	Report
ASTM D6922, homogeneity and miscibility	h	h	h
L-38 shear stability	i	i	i

Note: All oils must meet the requirements of the most recent edition of SAE J300; NR = Not required.

^aTests and limits are per ASTM D4485.

^bThere are no bench test and measured parameter requirements for other viscosity grades.

^cA passing volatility result in only one of these procedures is required.

^dEngine Oil Filterability Test (EOFT) Research Report is under development by ASTM Committee D02.06. The test procedure is available from the ASTM Test Monitoring Center, 6555 Penn Avenue, Pittsburgh, PA, 15206-4489.

^eEither Test Method D92 or Test Method D93 flash point requirement shall be met.

^fSettling volume determined at 5 min.

^gKinetic foam volume; mL/static foam volume and mL/collapse time in seconds.

^hHomogeneous with SAE reference oils.

ⁱ10-hour stripped kinematic viscosity (oil shall remain in original viscosity grade).

Source: <http://www.api.org/~media/files/certification/engine-oil-diesel/forms/whats-new/1509-technical-bulletin-1.pdf?la=en>

Requirements for API Service Category SJ by Viscosity Grade

Engine Test Requirements ^a - All Viscosity Grades		
Sequence IID or ASTM D6557 ^b		Pass
Sequence IIIE or IIIF or IIIG		Pass
Sequence VE or IVA plus VG ^b		Pass
L-38 or Sequence VIII		Pass
	Viscosity Grade Performance Criteria	
	SAE 0W-20, SAE 5W-20, SAE 5W-30, SAE 10W-30	All Others
Bench Test and Measured Parameter ^a		
Test Method D5800 volatility loss, % max ^c	22	20 ^d
Test Method D6417 volatility loss at 371°C (700°F), % max ^c	17	15 ^d
Test Method D5480 volatility loss at 371°C (700°F), % max ^c	17	15 ^d
EOFT ^e , % flow reduction, max	50	50
EOWTT, % flow reduction, max	Report	Report
With 0.6% H ₂ O	Report	Report
With 1.0 % H ₂ O	Report	Report
With 2.0 % H ₂ O	Report	Report
With 3.0 % H ₂ O	Report	Report
Test Method D4951 or D5185 phosphorus % mass, max	0.10 ^f	NR
Test Method D92 flash point, °C, min ^g	200	NR
Test Method D93 flash point, °C, min ^g	185	NR
Test Method D892 foaming tendency (Option A)		
Sequence I, max, foaming/settling ^h	10/0	10/0
Sequence II, max, foaming/settling ^h	50/0	50/0
Sequence III, max, foaming/settling ^h	10/0	10/0
Test Method D6082 (optional blending required), static foam max, tendency/stability	200/50 ⁱ	200/50 ⁱ
ASTM D6922, homogeneity and miscibility	j	j
L-38 or Sequence VIII shear stability	k	k
Test Method D6335 high temperature deposits (TEOST), deposit wt, mg, max	60	60
Test Method D5133 gelation index, max ^b	12	NR

Note: All oils must meet the requirements of the most recent edition of SAE J300; NR = Not required.

^aTests and limits are per ASTM D4485.

^bIf CI-4 and/or CJ-4 categories precede the “S” category and there is no API Certification Mark, the Sequence VG (ASTM D6593), Ball Rust (ASTM D6557), and Gelation Index (ASTM D5133) tests are not required.

^cVolatility requirement shall be met in either Test Method D5800, Test Method D 5480, or Test Method D6417. A passing result in only one of these procedures is required.

^dPassing volatility loss performance only required for SAE 15W-40 oils.

^eEngine Oil Filterability Test (EOFT) and Engine Oil Water Tolerance Test (EOWTT) Research Reports are under development by ASTM D02.06. Test procedures are available from the ASTM Test Monitoring Center, 6555 Penn Avenue, Pittsburgh, PA, 15206-4489.

^fThis is a non-critical specification as described in ASTM D3244.

^gEither Test Method D92 or Test Method D93 flash point requirement shall be met.

^hSettling volume determined at 10 min.

ⁱSettling volume determined at 1 min.

^jHomogeneous with SAE Reference Oils.

^kTen-hour stripped kinematic viscosity (oil shall remain in original viscosity grade).

Source:

<http://www.api.org/~media/files/certification/engine-oil-diesel/forms/whats-new/1509-technical-bulletin-1.pdf?la=en>

Requirements for API Service Category SL by Viscosity Grade

Engine Test Requirements ^a - All Viscosity Grades		
Sequence IIIF or IIIG		Pass
Sequence IVA		Pass
Sequence VE	Pass Wear Only Or a minimum 0.08% phosphorus in the form of ZDDP	
Sequence VGB ^b		Pass
Sequence VIII		Pass
Viscosity Grade Performance Criteria		
Bench Test and Measured Parameter ^a	SAE 0W-20, SAE 5W-20, SAE 0W-30, SAE 5W-30, SAE 10W-30	All Others
Test Method D6557 (Ball Rust Test), avg. gray value, min ^b	100	100
Test Method D5800 volatility loss, % max ^c	15	15
Test Method D6417 volatility loss at 371°C (700°F), % max ^c	10	10
EOFT ^c , % flow reduction, max	50	50
EOWTT ^c , % flow reduction, max		
With 0.6% H ₂ O	50	50
With 1.0 % H ₂ O	50	50
With 2.0 % H ₂ O	50	50
With 3.0 % H ₂ O	50	50
Test Method D4951 or D5185 phosphorus % mass, max	0.10 ^e	NR
Test Method D892 foaming tendency (Option A)		
Sequence I, max, foaming/settling ^f	10/0	10/0
Sequence II, max, foaming/settling ^f	50/0	50/0
Sequence III, max, foaming/settling ^f	10/0	10/0
Test Method D6082 (optional blending required), static foam max, tendency/stability ^g	100/0	100/0
ASTM D6922, homogeneity and miscibility	h	h
Sequence VIII shear stability	i	i
ASTM D7097, high temperature deposits (TEOSTMHT), deposit wt, mg, max	45	45
Test Method D5133 gelation index, max ^b	12 ^j	NR

Note: All oils must meet the requirements of the most recent edition of SAE J300; NR = Not required.

^aTests and limits are per ASTM D4485.

^bIf CI-4 and/or CJ-4 categories precede the “S” category and there is no API Certification Mark, the Sequence VG (ASTM D6593), Ball Rust (ASTM D6557), and Gelation Index (ASTM D5133) tests are not required.

^cEngine Oil Filterability Test (EOFT) and Engine Oil Water Tolerance Test (EOWTT) Research Reports are under development by ASTM Committee D02.06. Test procedures are available from the ASTM Test Monitoring Center, 6555 Penn Avenue, Pittsburgh, PA, 15206-4489.

^dFor all viscosity grades: If CF-4, CG-4, CH-4, and/or CI-4 (beginning September 5, 2002) categories precede the “S” category and there is no API Certification Mark, the limit for phosphorus does not apply. Note that these oils have been formulated primarily for diesel engines and may not provide all of the performance requirements consistent with vehicle manufacturers' recommendations for gasoline-fueled engines.

^eThis is a non-critical specification as described in ASTM D3244.

^fSettling volume determined at 10 min.

^gSettling volume determined at 1 min.

^hHomogeneous with SAE Reference Oils.

ⁱTen-hour stripped kinematic viscosity (oil shall remain in original viscosity grade).

^jFor gelation temperatures at or above the W-grade pumpability temperatures as defined in SAE J300

Source:

<http://www.api.org/~media/files/certification/engine-oil-diesel/forms/whats-new/1509-technical-bulletin-1.pdf?la=en>

Requirements for API Service Category SM

Engine Test Requirements ^a	Viscosity Grade Performance Requirements	
	SAE 0W-20, SAE 5W-20, SAE 0W-30, SAE 5W-30, SAE 10W-30	All Others
ASTM D7320, (Sequence IIIG)	Pass	Pass
ASTM D4684, (Sequence IIIGA)	Pass	NR
ASTM D6891, (Sequence IVA)	Pass	Pass
ASTM D6593, (Sequence VG) ^b	Pass	Pass
ASTM D6709, (Sequence VIII)	Pass	Pass

Bench Test and Measured Parameter ^a	Viscosity Grade Performance Requirements	
	SAE 0W-20, SAE 5W-20, SAE 0W-30, SAE 5W-30, SAE 10W-30	All Others
Test Method D6557 (Ball Rust Test), avg. gray value, min ^b	100	100
Test Method D5800, evaporation loss, 1 hour at 250°C, % max ^c	15	15
ASTM D6417, simulated distillation at 371°C, % max	10	10
ASTM D6795, EOFT, % flow reduction, max	50	50
ASTM D6794, EOWTT, % flow reduction, max		
With 0.6% H ₂ O	50	50
With 1.0 % H ₂ O	50	50
With 2.0 % H ₂ O	50	50
With 3.0 % H ₂ O	50	50
ASTM D4951, phosphorus % mass, max ^d	0.08 ^e	NR
ASTM D4951, phosphorus % mass, mind	0.06 ^e	0.06 ^e
ASTM D4951, or D2622, sulfur % mass, max ^d		
SAE 0W-20, 0W-30, 5W-20, and 5W-30	0.5 ^e	NR
SAE 10W-30	0.7 ^e	NR
Test Method D892 foaming tendency (Option A)		
Sequence I, mL, max, foaming/settling ^f	10/0	10/0
Sequence II, mL, max, foaming/settling ^f	50/0	50/0
Sequence III, mL, max, foaming/settling ^f	10/0	10/0
Test Method D6082 (option A) high temperature foaming mL, max, tendency/stability ^g	100/0	100/0

ASTM D6922, homogeneity and miscibility	h	h
ASTM D6709, (Sequence VIII) shear stability	i	i
ASTM D7097, high temperature deposits (TEOSTMHT), deposit wt, mg, max	35	45
Test Method D5133 gelation index, max ^b	12 ^j	NR

Note: All oils must meet the requirements of the most recent edition of SAE J300; NR = Not required.

^aTests are per ASTM requirements.

^bIf CI-4 and/or CJ-4 categories precede the “S” category and there is no API Certification Mark, the Sequence VG (ASTM D6593), Ball Rust (ASTM D6557), and Gelation Index (ASTM D5133) tests are not required.

^cCalculated conversions specified in ASTM D5800 are allowed.

^dFor all viscosity grades: If CF-4, CG-4, CH-4 and/or CI-4 categories precede the "S" category and there is no API Certification Mark, the limits for phosphorus, sulfur, and the TEOST MHT do not apply. Note that these oils have been formulated primarily for diesel engines and may not provide all of the performance requirements consistent with vehicle manufacturers' recommendations for gasoline-fueled engines.

^eThis is a non-critical specification as described in ASTM D3244.

^fAfter 10-minute settling period.

^gAfter 1-minute settling period.

^hShall remain homogenous and, when mixed with ASTM reference oils, shall remain miscible.

ⁱTen-hour stripped kinematic viscosity at 100°C. Kinematic viscosity must remain in original viscosity grade.

^jTo be evaluated from –5°C to temperature at which 40,000 cP is attained or –40°C, or 2 Celsius degrees below the appropriate MRV TP-1 temperature (defined by SAE J300), whichever occurs first.

Source:

<http://www.api.org/~media/files/certification/engine-oil-diesel/forms/whats-new/1509-technical-bulletin-1.pdf?la=en>

Requirements for API Service Category SN and API SN with Resource Conserving

Engine Test Requirements ^a	API SN	API SN	API SN with Resource Conserving
	SAE 0W-20, SAE 5W-20, SAE 0W-30, SAE 5W-30, SAE 10W-30	Other Viscosity Grades	All Viscosity Grades
ASTM D7320, (Sequence IIIG)	Pass	Pass	Pass
ASTM D6891, (Sequence IVA)	Pass	Pass	Pass
ASTM D6593, (Sequence VG) ^b	Pass	Pass	Pass
ASTM D7589, (Sequence VID) ^c	NR	NR	Pass
ASTM D6709, (Sequence VIII)	Pass	Pass	Pass
Bench Test and Measured Parameter^a			
Aged oil low-temperature viscosity			
ASTM D4684, (Sequence IIIGA), aged oil low temperature viscosity	Pass	Pass ^d	Pass
Or			
ASTM D7528, (Robo Test), aged oil low temperature viscosity	Pass	Pass ^d	Pass
ASTM D7320, (Sequence IIIGB) phosphorus retention, % min	NR	NR	79
Test Method D6557 (Ball Rust Test), avg. gray value, min ^b	100	100	100
Test Method D5800, evaporation loss, 1 hour at 250°C, % max ^e	15	15	15
ASTM D6417, simulated distillation at 371°C, % max	10	10	10
ASTM D6795, EOFT, % flow reduction, max	50	50	50
ASTM D6794, EOWTT, % flow reduction, max			
With 0.6% H ₂ O	50	50	50
With 1.0 % H ₂ O	50	50	50
With 2.0 % H ₂ O	50	50	50
With 3.0 % H ₂ O	50	50	50
ASTM D4951, phosphorus % mass, max ^f	0.08 ^g	NR	0.08 ^g
ASTM D4951, phosphorus % mass, min ^f	0.06 ^g	0.06 ^g	0.06 ^g
ASTM D4951, or D2622, sulfur % mass, max ^f			
SAE 0W-20, 0W-30, 5W-20, and 5W-30	0.5 ^g	NR	0.5 ^g
SAE 10W-30	0.6 ^g	NR	0.6 ^g
All other viscosity grades	NR	NR	0.6 ^g

ASTM D892 (Option A) foaming tendency			
Sequence I, mL, max, foaming/settling	10/0 ^h	10/0 ⁱ	10/0 ^h
Sequence II, mL, max, foaming/settling	50/0 ^h	50/0 ⁱ	50/0 ^h
Sequence III, mL, max, foaming/settling	10/0 ^h	10/0 ⁱ	10/0 ^h
Test Method D6082 (option A) high temperature foaming mL, max, tendency/stability ^h	100/0	100/0	100/0
ASTM D6922, homogeneity and miscibility	j	j	j
ASTM D6709, (Sequence VIII) shear stability	k	k	k
ASTM D7097, TEOST MHT high temperature deposits, deposit wt, mg, max ^f	35	45	35
Test Method D5133 gelation index, max ^b	12 ^l	NR	12 ^l
ASTM D6335, TEOST 33C, high-temperature deposits, total deposit weight, mg, max			
SAE 0W-20	NR	NR	NR
All other viscosity grades	NR	NR	30
ASTM D7563, emulsion retention	NR	NR	no water separation
ASTM D7216 Annex A2, elastomer compatibility	Table G-6	Table G-6	Table G-6

Note: All oils must meet the requirements of the most recent edition of SAE J300; NR = Not required.

^aTests are per ASTM requirements.

^bIf CI-4 and/or CJ-4 categories precede the “S” category and there is no API Certification Mark, the Sequence VG (ASTM D6593), Ball Rust (ASTM D6557), and Gelation Index (ASTM D5133) tests are not required.

^cViscosity grades are limited to 0W, 5W and 10W multigrade oils.

^dNot required for monograde and 15W, 20W, and 25W multigrade oils.

^eCalculated conversions specified in ASTM D5800 are allowed.

^fFor all viscosity grades: If CH-4, CI-4 and/or CJ-4 categories precede the “S” category and there is no API Certification Mark, the “S” category limits for phosphorus, sulfur, and the TEOST MHT do not apply. However, the CJ-4 limits for phosphorus and sulfur do apply for CJ-4 oils. Note that these “C” category oils have been formulated primarily for diesel engines

and may not provide all of the performance requirements consistent with vehicle manufacturers' recommendations for gasoline-fueled engines.

^gThis is a non-critical specification as described in ASTM D3244.

^hAfter 1-minute settling period.

ⁱAfter 10-minute settling period.

^jShall remain homogenous and, when mixed with ASTM reference oils, shall remain miscible.

^kTen-hour stripped kinematic viscosity at 100°C. Kinematic viscosity must remain in original viscosity grade.

^lTo be evaluated from –5°C to temperature at which 40,000 cP is attained or –40°C, or 2 Celsius degrees below the appropriate MRV TP-1 temperature (defined by SAE J300), whichever occurs first.

Source:

<http://www.api.org/~media/files/certification/engine-oil-diesel/forms/whats-new/1509-technical-bulletin-1.pdf?la=en>

JASO T903:2011 Requirements

Part A: Performance Specification

Specification	Categories
API	SG, SH, SJ, SL, SM, SN
ILSAC	GF-1, GF-2, GF-3
ACEA	A1/B1, A3/B3, A3/B4, A5/B5, C2, C3, C4

Part B: Physical/Chemical Properties

Property	Requirement
Sulfated Ash (% mass), max	1.2
Evaporation Loss (% mass), max	20
Foaming Tendency/Stability (ml), max	
Sequence I	10/0
Sequence II	50/0
Sequence III	10/0
Phosphorus (% mass)	0.08 min - 0.12 max
Shear Stability Kinematic Viscosity (mm ² /s) (After 30-cycles)	XW-30 > 9.0
	XW-40 > 12.0
	XW-50 > 15.0
	Others: Stay-in-Grade
HTHS Viscosity (mPa-s), min	2.9

Part C: Frictional Properties (JASO T 903:2011 (Annex A))

Property	MA	MA2	MA1	MB
Dynamic Friction Characteristic Index (DFI)	≥ 1.30 and < 2.50	≥ 1.85 and < 2.50	≥ 1.30 and < 1.85	≥ 0.50 and < 1.30
Static Friction Characteristic Index (SFI)	≥ 1.25 and < 2.50	≥ 1.70 and < 2.50	≥ 1.25 and < 1.70	≥ 0.50 and < 1.25
Stop Time Index (STI)	≥ 1.45 and < 2.50	≥ 1.85 and < 2.50	≥ 1.45 and < 1.85	≥ 0.50 and < 1.45

The significance of the three indices:	
Dynamic Friction Characteristic Index (DFI)	Measure of clutch feel and how progressively power transfers under slipping conditions
Static Friction Characteristic Index (SFI)	Measure of closed clutch pack torque handling capacity - resistance to clutch slip under high-torque “break-away” conditions
Stop Time Index (STI)	Measure of how quickly the clutch engages

Source: <https://www.lubrizol.com/MCEO/Spec-Check/JASO-T903-Four-Stroke.html>

APPENDIX – VI SUMMARY OF RESEARCH FLOW WITH RESULTS

Sr. No.	Objective Number	Null Hypothesis Number	Question Number in Questionnaire for Users	Question Number in Questionnaire for Mechanics	Test Method	Test Result	Null Hypothesis Accepted/ Rejected
1	1	Not Applicable	1, 2	1A, 1B	Not Applicable	Not Applicable	Not Applicable
2	2	H _{1a}	8	Not Applicable	ANOVA	0.000	Rejected
3	2	H _{1b}	9	Not Applicable	ANOVA	0.000	Rejected
4	2	H _{1c}	11 to 14	Not Applicable	ANOVA	0.000	Rejected
5	3	H ₂	5, 6, 7	Not Applicable	ANOVA	0.000	Rejected
6	3	H ₃	10	Not Applicable	ANOVA	0.000	Rejected
7	4	H _{4a}	15	Not Applicable	ANOVA	0.000	Rejected
8	4	H _{4b}	16	Not Applicable	ANOVA	0.000	Rejected
9	4	H _{5a}	33A	Not Applicable	CHI-SQUARE	0.034	Rejected
10	4	H _{5b}	33Bii	Not Applicable	CHI-SQUARE	0.000	Rejected
11	4	H _{5c}	33Bi	Not Applicable	CHI-SQUARE	0.425	Accepted
12	4	H _{5d}	33C	Not Applicable	CHI-SQUARE	0.001	Rejected
13	4	H _{6a}	31	Not Applicable	CHI-SQUARE	0.167	Accepted
14	4	H _{6b}	35	Not Applicable	CHI-SQUARE	0.515	Accepted

Sr. No.	Objective Number	Null Hypothesis Number	Question Number in Questionnaire for Users	Question Number in Questionnaire for Mechanics	Test Method	Test Result	Null Hypothesis Accepted/ Rejected
15	4	H _{6c}	30	Not Applicable	CHI-SQUARE	0.277	Accepted
16	4	H _{6d}	32	Not Applicable	CHI-SQUARE	0.335	Accepted
17	4	H _{6e}	34	Not Applicable	CHI-SQUARE	0.039	Rejected
18	4	H _{6f}	36	Not Applicable	CHI-SQUARE	0.444	Accepted
19	4	H _{7a}	17, 18	Not Applicable	ANOVA	0.000	Rejected
20	4	H _{7b}	21, 22	Not Applicable	ANOVA	0.000	Rejected
21	4	H _{7c}	19, 20	Not Applicable	ANOVA	0.000	Rejected
22	4	H _{7d}	3, 4	Not Applicable	ANOVA	0.000	Rejected
23	4	H _{8a}	26A	Not Applicable	ANOVA	0.456	Accepted
24	4	H _{8b}	26B	Not Applicable	ANOVA	0.188	Accepted
25	4	H _{8c}	26C	Not Applicable	ANOVA	0.312	Accepted
26	4	H _{8d}	26D	Not Applicable	ANOVA	0.302	Accepted
27	4	H _{8e}	26E	Not Applicable	ANOVA	0.153	Accepted
28	4	H _{8f}	26F	Not Applicable	ANOVA	0.126	Accepted
29	4	H _{8g}	26G	Not Applicable	ANOVA	0.290	Accepted
30	4	H _{8h}	26H	Not Applicable	ANOVA	0.858	Accepted
31	4	H _{9a}	27A	Not Applicable	ANOVA	0.044	Rejected
32	4	H _{9b}	27B	Not Applicable	ANOVA	0.909	Accepted
33	4	H _{9c}	27C	Not Applicable	ANOVA	0.287	Accepted

Sr. No.	Objective Number	Null Hypothesis Number	Question Number in Questionnaire for Users	Question Number in Questionnaire for Mechanics	Test Method	Test Result	Null Hypothesis Accepted/ Rejected
34	4	H _{9d}	27D	Not Applicable	ANOVA	0.004	Rejected
35	4	H _{9e}	27E	Not Applicable	ANOVA	0.919	Accepted
36	5	H _{10a}	28A	Not Applicable	ANOVA	0.346	Accepted
37	5	H _{10b}	28B	Not Applicable	ANOVA	0.019	Rejected
38	5	H _{10c}	28C	Not Applicable	ANOVA	0.054	Accepted
39	5	H _{10d}	28D	Not Applicable	ANOVA	0.003	Rejected
40	5	H _{10e}	28E	Not Applicable	ANOVA	0.002	Rejected
41	5	H _{10f}	28F	Not Applicable	ANOVA	0.009	Rejected
42	3	H ₁₁	24	Not Applicable	ANOVA	0.008	Rejected
43	3	H ₁₂	23, 25	Not Applicable	ANOVA	0.000	Rejected
44	5	H _{013a}	Not Applicable	2, 3	ANOVA	0.542	Accepted
45	5	H _{013b}	Not Applicable	4	ANOVA	0.189	Accepted
46	2	H ₀₁₄	Not Applicable	5	ANOVA	0.789	Accepted
47	6	H ₀₁₅	Not Applicable	6, 7, 8, 9, 12	ANOVA	0.824	Accepted
48	6	H _{016a}	Not Applicable	10, 11	ANOVA	0.001	Rejected
49	6	H _{016b}	Not Applicable	13, 14	ANOVA	0.048	Rejected
50	6	Not Applicable	Not Applicable	15A to 15H, 16A to 16K, 17A to 17D	FACTOR ANALYSIS	5 Factors Extracted	Not Applicable

APPENDIX - VII Publications of the Scholar in the Area of Research

1. Saha, D., Gopal, R. and Singh, B. M. (2015), “An Analysis of Role of Marketplace Influence in Adoption and Usage of Synthetic Lubricants for Two-wheelers”, *International Journal of Research & Development in Technology and Management Science*, Vol. 21, Issue 6, pp. 1-17.
2. Saha, D. and Gopal R (2014), “An Analysis of the Factors That Influence the Influencers’ Recommendations with Regard to the Purchase of Automotive Lubricants for Two-Wheelers”, *The IUP Journal of Marketing Management*, Vol. XIII, No. 4, pp. 23-37.
3. Saha, D. (2013), “Usage of Opinion Leaders as a Marketing Tool in Rural Markets of India”, *The IUJ Journal of Management*, Vol. 1, No.1, pp. 82-86.