

Market Trends and Consumer behavioral patterns on Automotive Coolants

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ABSTRACT: The study of this research paper attempts to outline the behavioural patterns of the consumers in buying and using the automotive coolants for their respective automobiles which illustrates the market trends of the coolant industry in Bangalore. The study is designed with a unique questionnaire for respective target group of retail outlets, workshops, consumers with a sample size of 195 and analysis is made as per the objectives with different statistical tools. This showed that as the world is advancing, and the standard of consumers is raising day-by-day. Consumers preferred OEM brands over non-OEM's and buy a coolant based on the efficiency and quality of the coolant. Even then, Castrol being a non-OEM brand managed to stand as a market leader due to high quality and great brand image that replaced the OEM's as well. With all the analysis, consumers are keener about the coolant being used in their vehicle and they are realizing the importance of the same.

KEY WORDS: Automotive coolant, Behavioural patterns, Market trends of the brands

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I. INTRODUCTION

Automotive coolants play a vital role in the lifespan of any automobile. In olden days, people were using water as a coolant in the vehicles which results in poor performance of the engine due to lack of heat-transfer and corrosion of the engine and ultimately the demise of vehicle. Though people are aware now-a-days about the purpose of the coolants few of them still use water as a coolant at times. Most of the consumers follow the OEM brand coolants for their respective brand vehicle and Non-OEM's are preferred in individual workshops.

An Original Equipment Manufacturer (OEM) coolant is a coolant manufactured by the automotive companies by themselves exclusively for their products. For example, Toyota Super Cool is an OEM exclusive for Toyota's vehicles, Maruti genuine coolant is an OEM exclusive for Maruti Vehicles. A non-Original Equipment Manufacturer's coolant is a coolant manufactured by an exclusively coolant or lubricant manufacturers and are recommended to be used by any make of the Automobile.

An Automotive engine coolant is a fluid that is used to maintain the temperature of the engine in an automobile either by transferring the heat to other components that make use of it or disperse it. An ideal coolant has a property of low viscosity, high thermal capacity and should be corrosion free.

There are wide fluctuations in consumer behavioural patterns in buying and using the automotive coolants. This paper shows different behavioral patterns of the consumers depending upon the promotions, brand image, quality, price, lifespan of coolant, make of the coolant, outlet store, etc. which are accountable for the market trends of brands available in the market.

II. LITERATURE REVIEW

David William et al, did a Market Research on Global Automotive Coolant Market with the detailed analysis of qualitative as well as quantitative aspects with the help of various industry experts to gain the deeper insight of the market and industry performance. The analysis provides current market scenario in terms of volume, technological advancement and macro economical/governing factors in the market. The report provides detailed information and strategies of the top key players in the industry. The interpretations and conclusions started that the advancement of the technology and the way of easing the lives of the consumers by the companies and in alignment to satisfy their needs will make out the company to stand out in the public.

Taofeek Ayotunde Yusuf et al, surveyed and analyzed that Engine coolant came as branded products to circumvent the challenges of high freezing point, low boiling point, unsuitable pH and high corrosive influence of water. In spite of this novel invention, a larger number of automobile users have still continued to use water for cooling their engines. The result of correlations revealed a highly significant relationship between choice of coolants and age of car usage from time of purchase which suggests that automobile users more commonly make use of water near the time of purchase and Branded Engine Coolant (BEC) or OEM as the years of possession

increase.

Faizelet al, Indian automotive sector witnessed robust growth during 2009-12. However, in 2013, Indian automobile sector witnessed a negative growth, resulting in the country's automobile coolant market exhibiting a marginal decline. Nevertheless, Indian automobile sector is projected to grow over the next five years. Northern region accounts for the highest OEM as well as after market coolant demand in the country. However, southern region of the country is emerging as the key investment destination for various global automobile manufacturers, and it is anticipated that by 2019, majority of OEM coolant demand would emanate from the country's southern region. In India, retail channel is acting as the strongest driver for sales of automotive coolant. OEM franchised service centers provide the second biggest sales channel for the automobile coolant in the country. However, the gap between authorized service centers and the country's growing automobile fleet is widening every year, which is creating an opportunity for mushrooming of small independent workshops in the country.

Geo et al, The market for antifreeze, by value, is projected to grow at the fastest rate in the light commercial vehicle (LCV) segment. While passenger cars dominated the market in 2016, light commercial vehicles are expected to dominate the market by 2021. This is due to the increase in production of this segment of vehicles. Ethylene glycol is expected to dominate the base product market for antifreeze in the automotive industry. This is due to its efficient thermal properties, which make it suitable for extremely cold regions, along with its economical prices. The growing demand for battery-operated electric vehicles and the introduction of coolants with extended service life are restraining the original equipment and aftermarket for automotive antifreeze, respectively.

III. RESEARCH AND ANALYSIS

To understand the market trends and behavioral patterns of consumers on automotive coolants, the Research has been done across the Bangalore region to understand the automotive coolant market through surveys with the different target group that includes the Lubricant and coolant retail outlets, Individual workshops, Authorized workshops, Consumers. There was also a personal interaction with the target group for better understanding and suggestions.

The survey has been conducted at the time of interaction with a proper unique questionnaire for each target group with different sample size and post that a detailed analysis is made with data recorded using various pie charts, bar graphs, Venn diagrams, perpetual mapping tools and statistical tools to obtain the results and conclusions.

OBJECTIVE

The objective is

- To study and evaluate the automotive coolant market in Bangalore through various target groups.
- To understand about the consumer usage of coolant, behavior towards brand switching, buying decisions based on influences, promotions.
- To understand the selling patterns of the retailers and workshops.

IV. RESEARCH METHODOLOGY

For this research, we have done a primary research and also secondary research to get better insight and support the conclusions. We adopted a method of data recording through surveys and personal interaction on set of questionnaires related to each set of target groups.

In general, the questionnaire contains the personal information of the respondent, list, type, quantity, price, strengths, and weakness of the coolant, promotions and recommendations provided to brand. There are specific questions for the retail outlets stating to respond with their Prices, Margins, SKU's maintained, and re-order quantity. In the same way there are specific questions provided to each target group.

V. SAMPLE DESIGN

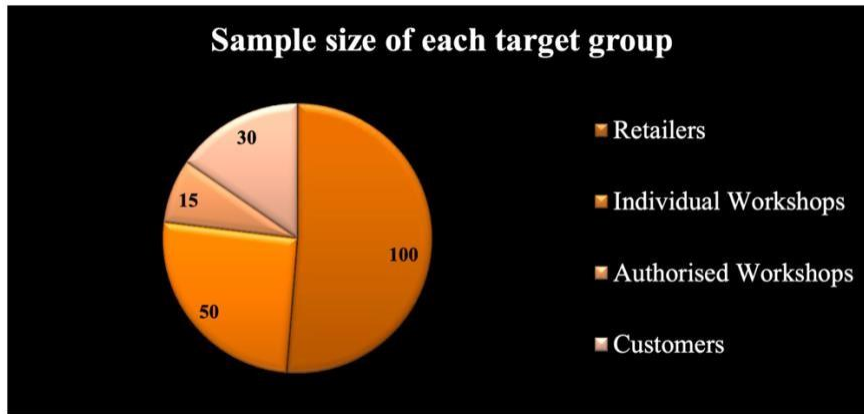
The research is designed to get the insights on the use of automotive coolant market in the Bangalore city. Bangalore is rich in its culture and has people belonging to different segments. Bangalore has all type of vehicle in almost all the companies and has a huge consumer base across all these segments. Hence has a big market for the coolant and to get a better insight about market trends.

There are four target groups where the data has been recorded and they include retail outlets, individual workshops/garages, authorized workshops/garages, Consumers. Retail outlets include both well-established lubricants and spare parts retail outlets and small outlets across the Bangalore city. They include who deal with multiple brands and have Multi brand dealership and also exclusive dealerships.

Garages include both Individual workshops (IWS) and Authorized workshops (AWS) across the city. Individual workshops consist that deal with only cars and all type of vehicles and AWS are the company's service stations like Audi, BMW, Toyota, Honda, Hyundai etc. Consumers are the end customers who are owner of the vehicles

from different segments.

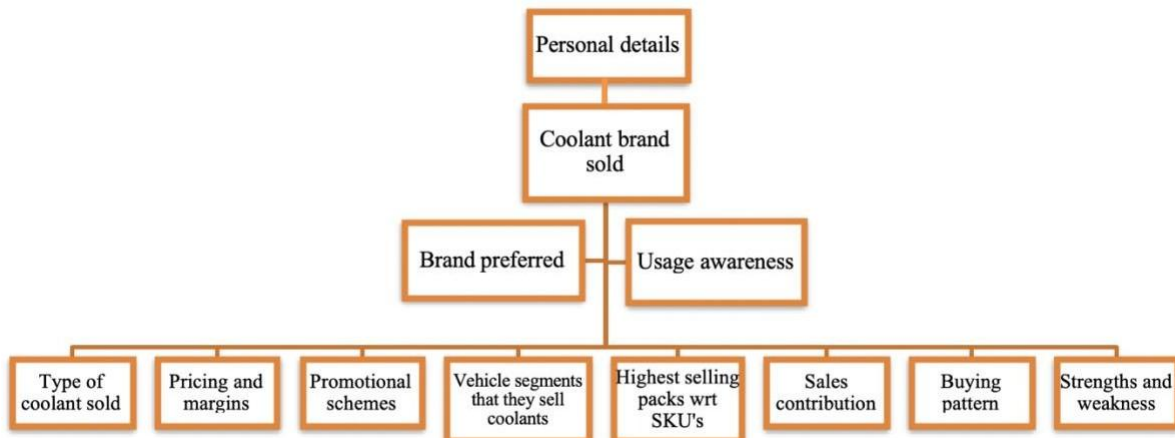
The survey and research have been conducted for a period of two months. The size of each sample target group is as follows.



DATA COLLECTION METHOD

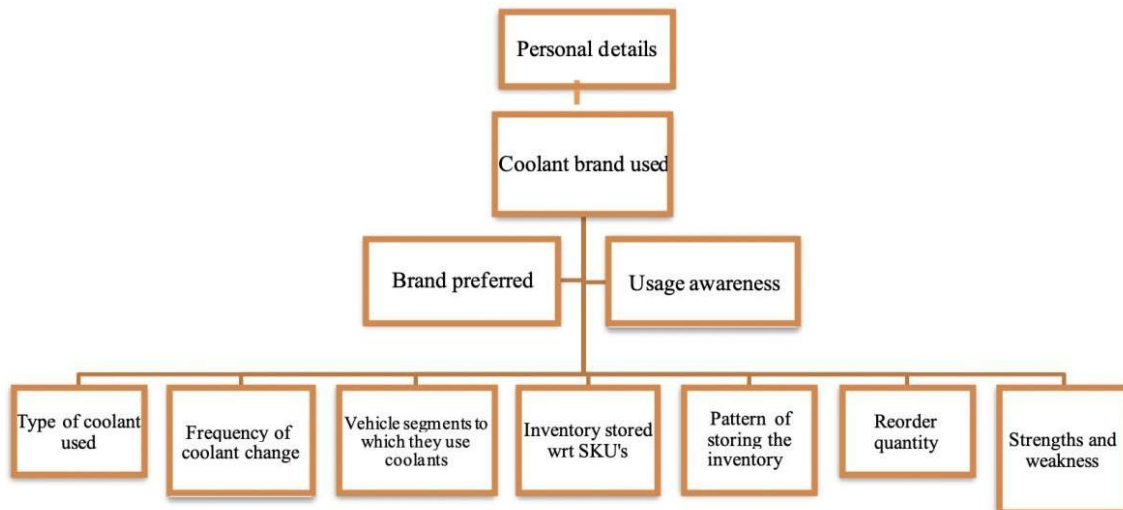
For surveys, questionnaire for each target group is set accordingly.

For Retail outlets,



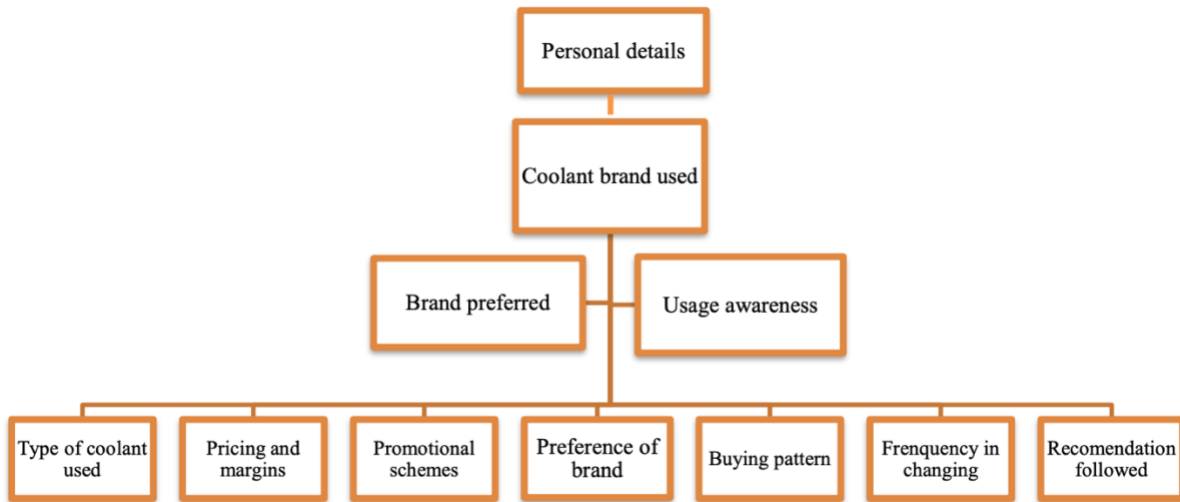
Source: From the survey questionnaire made by the author

For Workshops,



Source: From the survey questionnaire made by the author

For Consumers,



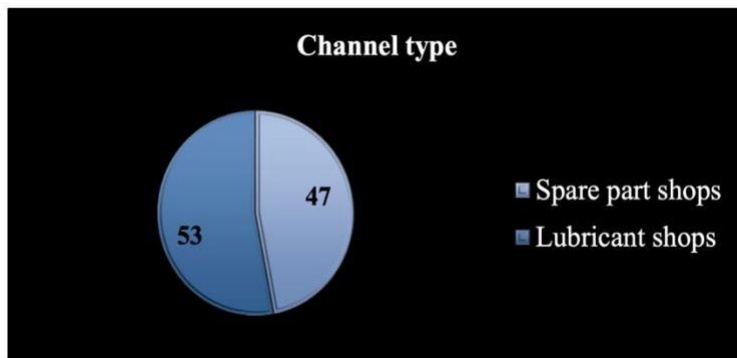
Source: From the survey questionnaire made by the author

ANALYSIS OF THE DATA RECORDED

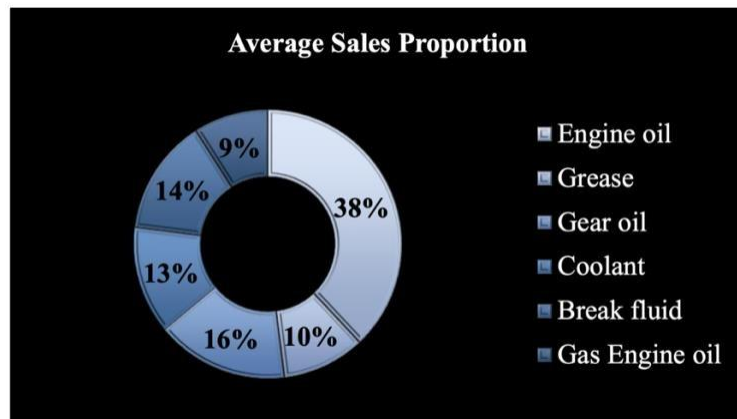
Using various pie charts, bar graphs, Venn diagrams, perpetual mapping tools and statistical tools and analytics the data that is recorded is analyzed and the results are generated, and conclusions are made.

Interpretations Retailers

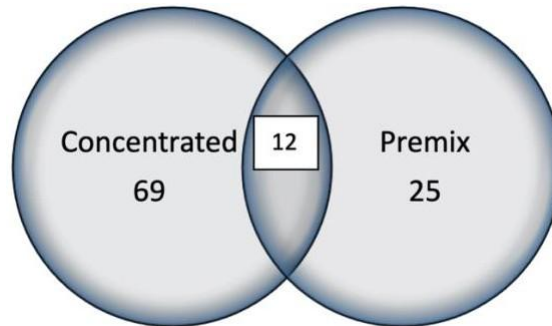
- The survey for this target group has been done in the both spare part shops and exclusive lubricant shops. The total of 100 retailers are the sample size.
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- In these outlets, the average sales proportion for all the lubricant segments to the sales proportion of total lubricant sales is as follows.



- In these outlets, the number of outlets that sell only concentrated coolant, premixed coolants and both types of coolants are shown below.



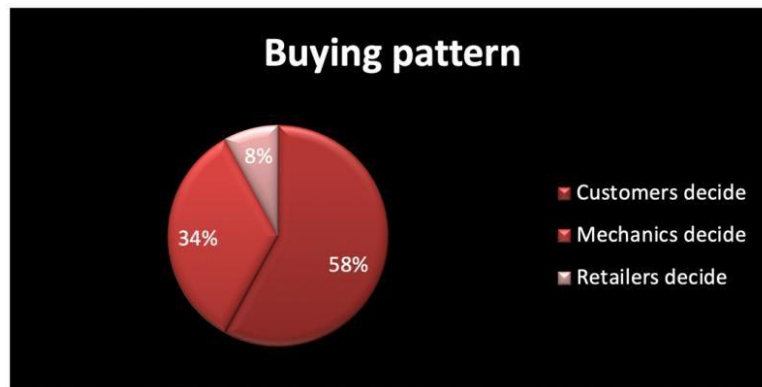
Source: Interpretations from the survey on the target group

Brands

- There are both Internationally recognized brands and few local players as well in the surveyed market.
- Few Internationally recognized brands are Castrol, Bosch, Valvoline, Puroguard, Maruti Genuine coolant, Servo, Shell, Gulf, Delphi, Elofic, Golden cruiser, Mak, Motul, Quizz etc.
- Local brands include Greentech, Uniforth, Castro, Zaan, Turbo and all these are concentrated type and with medium and low quality but with high margins.

Buying Pattern

- Around 75% of the surveyed retailers responded that consumers who buy the coolant are aware of the benefits and requirements of the coolants.
- Generally, to buy a coolant, around 58% of the surveyed retailers responded that customers decide and 34% are decided by consumer's mechanics and 8% responded as only few who come there decide.



Source: Interpretations from the survey on the target group

Product recommendation

- The recommendation followed by the retailers for the products that are being sold are as follows.



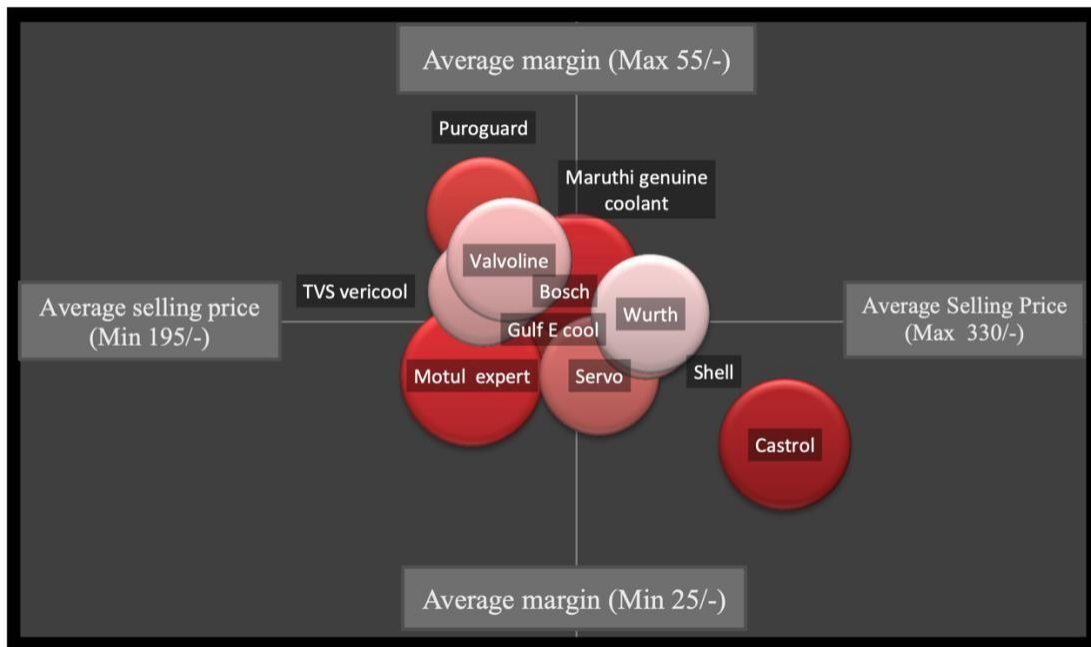
Source: Interpretations from the survey on the target group

Product promotions

- Promotion is one of the major factors that influence the consumers, but the results generated were quite different as not many companies provide promotional schemes.
- In terms of promotions as per the survey, the brands like Castrol give around 4-5 liters free on a purchase of 4 cases of coolant on a single purchase.
- Valvoline rarely gives shopping coupons on purchase of the products.
- Local brands offer their product in the loose quantity (not in particular packed quantity).

Pricing and Margins

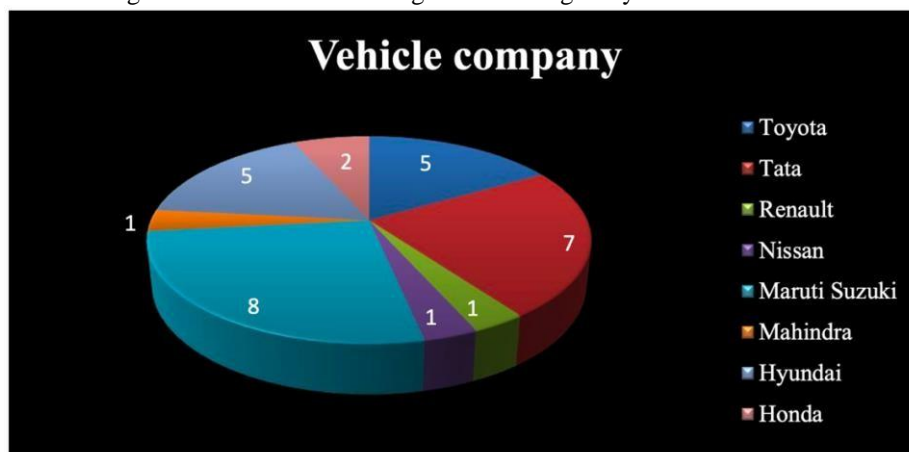
- Among the retailers that are surveyed, below are the top 11 products and Castrol has the maximum selling price which is 330/- and Motul expert has minimum selling price 195/- per liter.
- Castrol gives the less margin of an average of 25/- to the dealers and high margin is from Puroguard which is 55/- per liter.
- The below is the perpetual mapping of the prices and margins of the 11 brands.



Source: Interpretations from the survey on the target group

Consumers

The coolant survey for the consumers has been conducted targeting both non-use vehicle consumers and cabs (or) taxis consumers. The survey has been done taking a sample size of 30 consumers which includes the different vehicle models from the companies namely Toyota, Hyundai, Honda, Mahindra, Maruti Suzuki, Nissan, Renault, Tata that are in good condition and which get serviced regularly.



Source: Interpretations from the survey on the target group

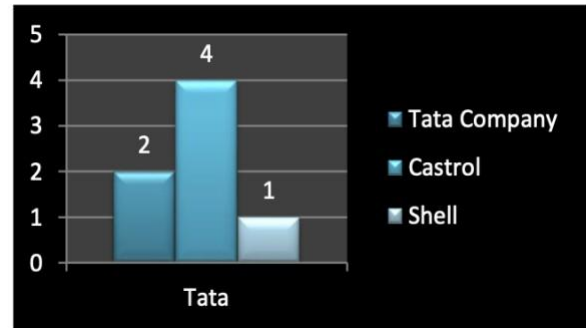
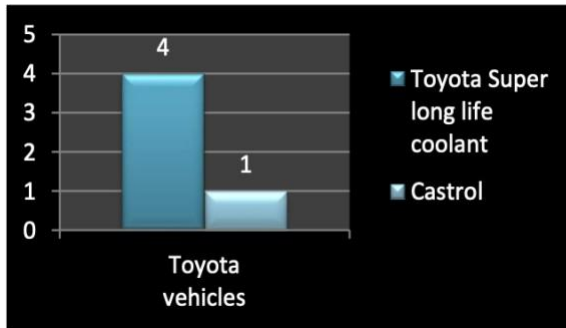
Among the sample size around 57% of the vehicle's users use the OEM coolant which means the consumer uses the coolant brand manufactured by its respective automobile company such as

Toyota - Toyota super long-life coolant Tata - Tata coolant

Nissan - Nissan antifreeze coolant Maruti Suzuki - Maruti Genuine coolant Mahindra - Mahindra ultra-cool

Hyundai - Hyundai long life coolant antifreeze Honda - Honda company coolant

On the other side the rest 43% of the surveyed vehicle consumers use other brands like Castrol, Shell, Puroguardastheirprimarycoolantwhicharequitegoodandsatisfactoryinperformanceasperthevehicleowners. Few consumers use the brands like Castrol, Shell, Servo, Bosch as their secondary preference at the time of emergency when they don't find OEM coolants.

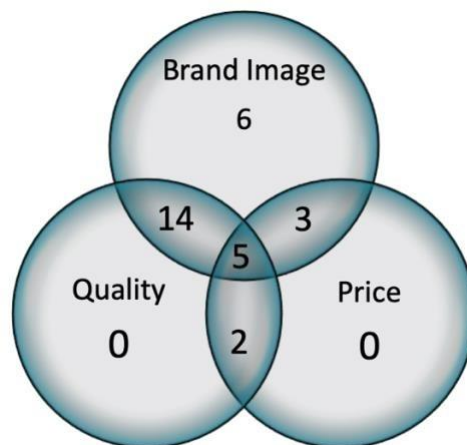


Note: For all other Company cars that are surveyed, only use their particular OEM coolants.

Source: Interpretations from the survey on the target group

Out of the coolants that are being used by the consumers over the survey 47% coolants is the Pre-mixed or Ready-to-use coolant and found that all these belong to the OEM brands and are being for their company vehicle. The rest 53% belongs to the Non-OEM brands which are suggested by mechanic from local garages where these vehicles get serviced and most of these vehicles are being used as cabs and the coolant for these non OEMbrandshavebeenpurchasedfromSparepartshopsandallOEMbrandsareusedinthecompanycarservice center.

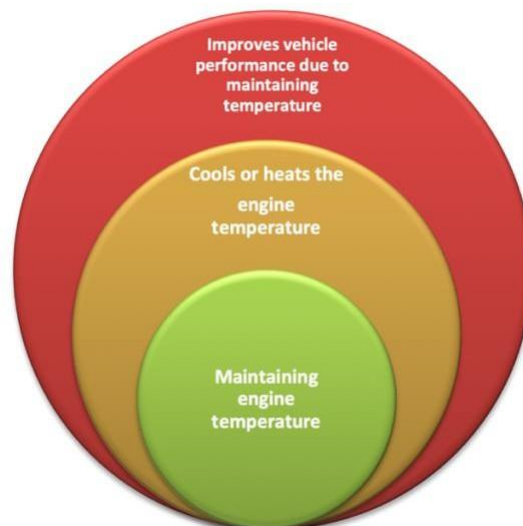
There is always something that influences anyone in doing something. Over here the primary factthat influences the consumer is the Brand name or Brand image and then the secondary factor is the Quality that influences them followed by price and mechanic recommendation. Below Venn diagram demonstrates clearly which factor influences certain number ofconsumers.



Source: Interpretations from the survey on the target group

As per the survey all consumers over this region change the coolant on the recommendation by the respective mechanic (Authorized or local) and rarely at the time of emergency, the consumers self-change the coolant with the available coolant and later on service it by the mechanic.

It's quite common that not everyone is aware of what they are using in their vehicle. Similarly as per the survey about 50% of the consumers are not aware of the purpose of coolant in their vehicle and rest are quite aware of the purpose of the coolant, as per them it is used to maintain the temperature of the engine so that the performance of the vehicle will be good and will be in good health. Below stacked Venn diagram shows the purpose and result of using the coolant as per survey from consumers.



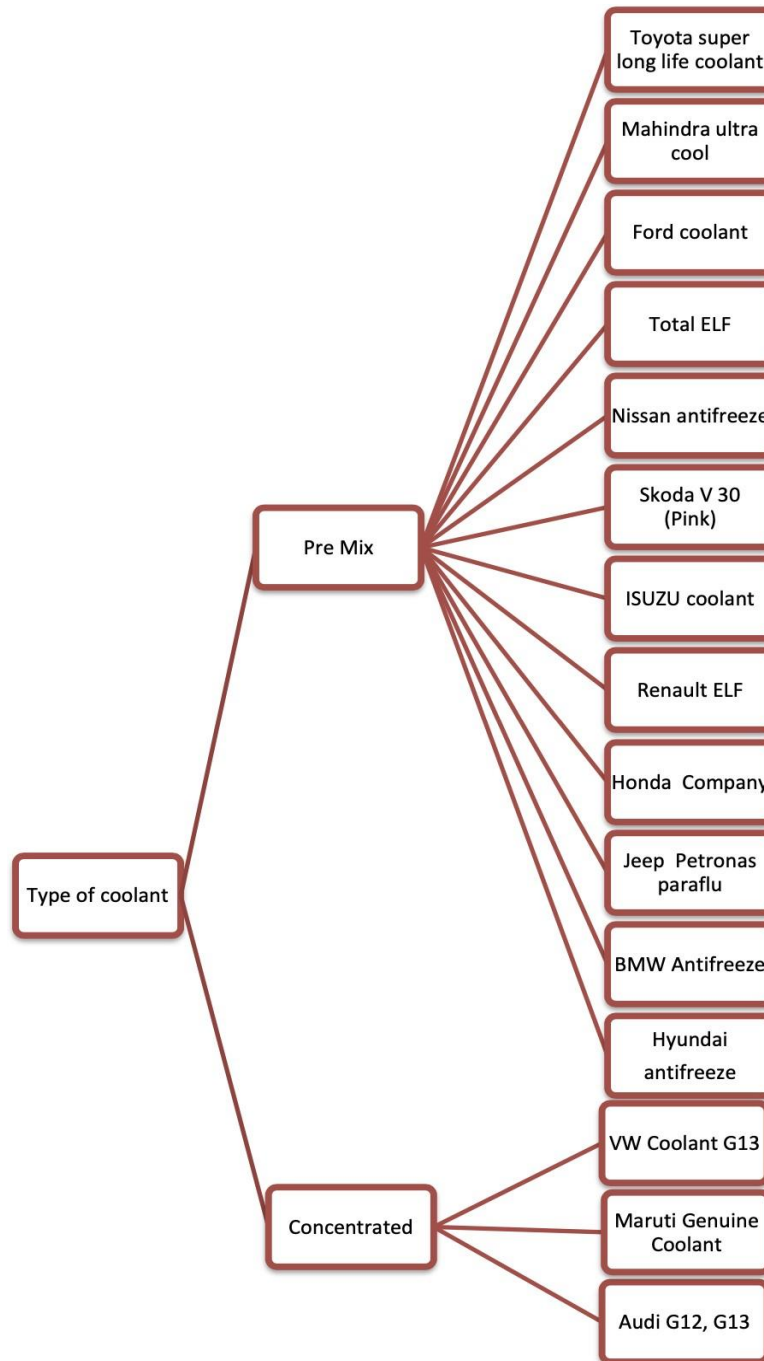
Source: Interpretations from the survey on the target group

Authorized workshop analysis

The survey in the Authorized workshop for the coolants that are being used in the Automobile industry has been done with the sample size of 15 companies which consists of Toyota, Honda, Hyundai, Nissan, Renault, ISUZU, Skoda, Volkswagen, Jeep, Fiat, BMW, Audi, Ford, Maruti Suzuki, Mahindra, Chevrolet service centers in the Bangalore city.

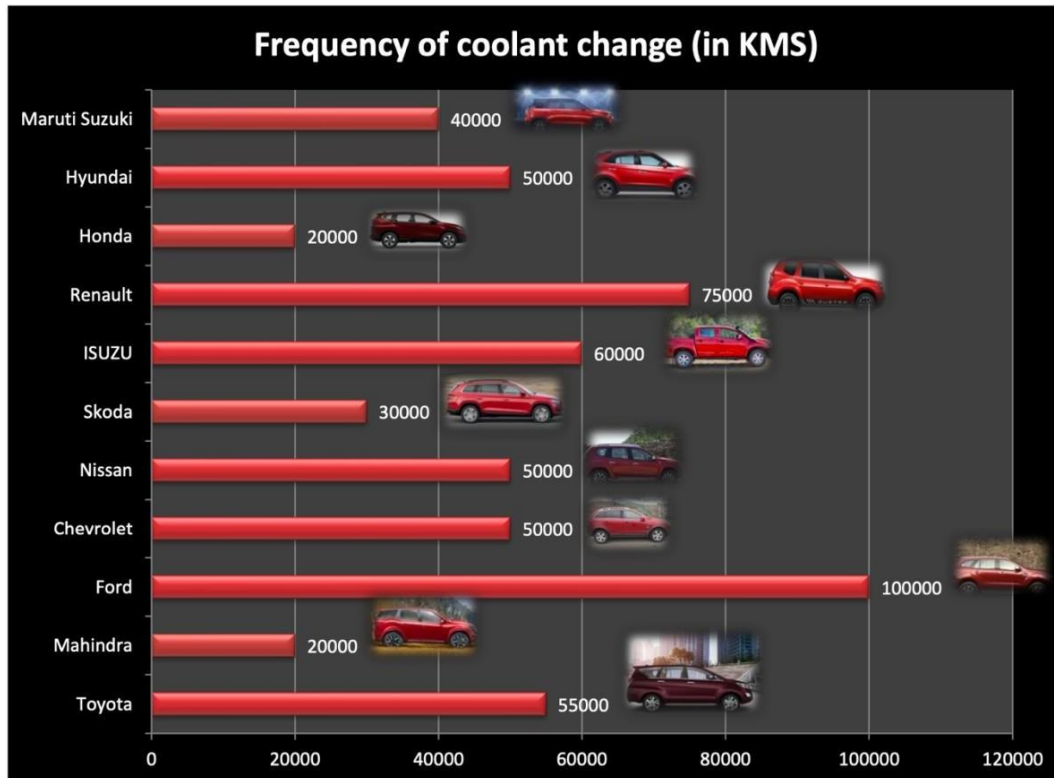
All these companies use their respective own coolants made especially for their vehicles which are known as OEM coolants. Each company has its unique product but basically as per the interaction with the service managers at the company service center, the coolant that all these companies use is almost one and all the same. The only difference is the brand name and bit of quality. All the companies use premix coolant except Maruti Suzuki because premix is quite easy and convenient way to top up the vehicle coolant over the concentrated coolant. The other drawback for the concentrated coolant is that it should be mixed with correct amount of water which sometimes creates confusion in maintaining the correct ratio. The brands that come under which

type is differentiated below.



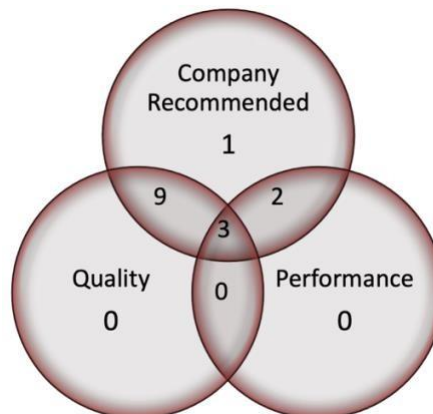
Source: Interpretations from the survey on the target group

As per the survey in these brand service centers, the coolant should be changed on a regular basis considering health of the vehicle and for the better performance of the vehicle. This varies from company to company and hence each company has its unique number of kilometers based on the vehicle make and specifications and post completion of those kilometers the coolant should be top-up or should be drained out and refilled completely. As per the survey the companies Volkswagen, Audi, BMW, Jeep have lifetime coolant but even then due to inappropriate usage of the vehicle or any accidental damage then the coolant is refilled and for the rest of the brands below graph shows the number of kilometers.



Source: Interpretations from the survey on the target group

In current market scenario recommendation is one of the major factors that influences the purchase decision or usage of the product. The recommendation can be based on the quality, profit margin, commission for the mechanic/dealer. As per the survey in these company service centers, they recommend the product based on the company recommended, quality, performance, rarely cooling effect. Below Venn diagram clearly depicts the recommendation factors chosen. Skoda, Volkswagen, Chevrolet are the companies that chose all three factors.



Source: Interpretations from the survey on the target group

Individual workshop analysis

The survey in the Individual workshop for the coolants that are being used in the Automobile industry has been done with the sample size of 50 workshops across all over the Bangalore city.

As per the survey, the workshops in Bangalore use different brands of coolants which are internationally well known, and they also use local brands that are mostly confined to in and around Bangalore. Each of these workshops use certain brands regularly and prefer using that to the consumer's vehicle unless until consumer asks for any specific brand other than the one that mechanic is using. This happens rarely as most of the consumers really don't mind about the coolant that is being used where they go with suggestion of the mechanic. Usually, the products mentioned below are used by the workshops.



Aqua cool



Golden Cruiser



Aqua power



Hella



Bosch



HMS coolant



Castrol



Hyundai Antifreeze



Curoguard



Mahindra First choice



Delphi



Maruti Genuine coolant



Elofic



Purocool



Gulf

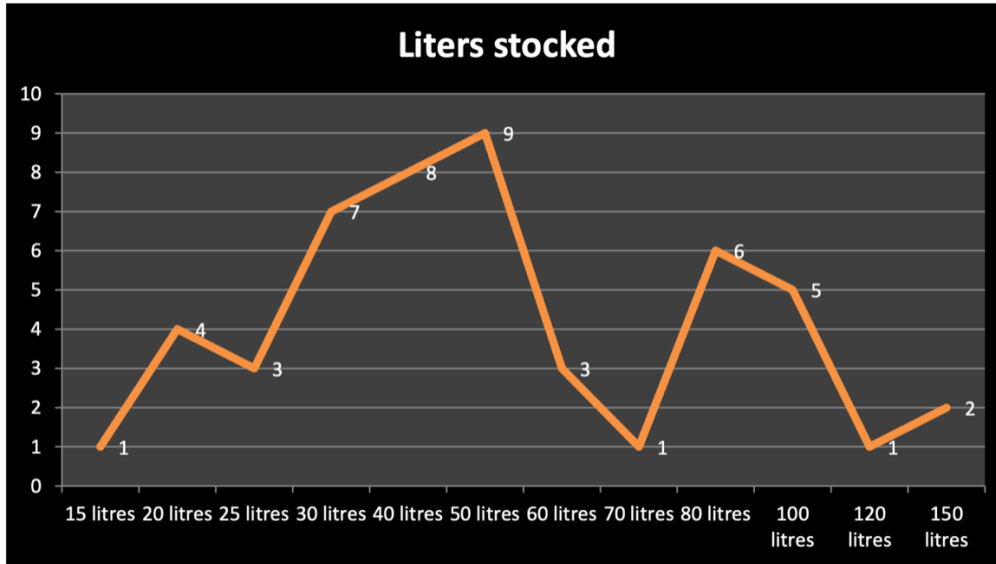


Puroguard



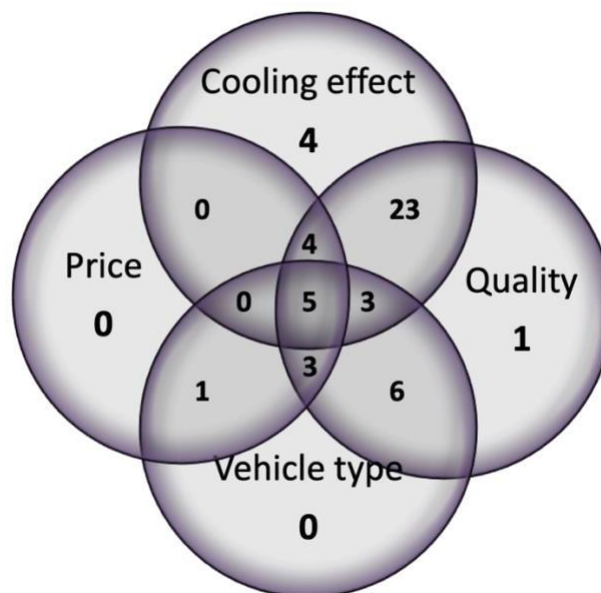
Promotions are one of the factors that attract anyone towards the product and influence them to buy. Usually the mechanics in the garage buy only from certain retailers or rarely from the distributors. However, from whom they buy they get a decent discount for the products to maintain the regular consumer.

So, here as per the survey over this region, Castrol is much used and preferred by the consumers and Retailers provide good promotion by giving discount on the prices based on the quantity they purchase. Around 36% of the total garages using Castrol as their coolant are getting discount on price. One garage which buys directly from the Bosch company/distributor gets a promotion as few free liters of coolant on the purchase and few garages get the products on credit from the retailers and this also plays a role to attract the garage owners. Usually whenever there is requirement only the garage owner buys and uses the coolant and of course they do maintain stock sometimes and they re-order and fill the stock whenever it is completed and they do order for every 30 days approximately. As per the survey in IWS the coolants are stored from 15- 150liters.



Source: Interpretations from the survey on the target group

One buys anything that satisfies their needs and Mechanic pitches in such a way so as to convince the consumer to use the product. As per the survey, the mechanic considers a lot of factors which brings mutual benefit with the consumer. In terms of mechanic the margin, quality standard and in terms of consumer the cooling effect of the coolant to maintain temperature, depending on vehicle type the coolant color is decided and used, price, quality of the coolant that suits the vehicle. Below Venn shows the what factors are used by the IWS for the consumers.



Source: Interpretations from the survey on the target group

VI. CONCLUSIONS

- As per the objective of the study and requirement the automotive coolant Business Opportunity in Bangalore is surveyed and it can be concluded through the sample size of the target group that, Castrol is the market leader in terms of coolant industry. This is due to the strong brand image the company has in the market in the lubricant industry.
- The consumers prefer to service their vehicles in the respective company service centers. As they get discounts and trusted service is provided and OEM's are used at the time of service. This shows consumers are moving away from the traditional method where they get the service done from local garages.
- If consumers are buying the coolants, consumer buys them from the spare part outlets which have both spare parts and lubricants.
- Though few consumers who have no idea about the purpose of coolant and their uses but are concerned about the vehicle health and service regularly, the individual workshops and authorized workshops depending on the consumer willingness and/or during emergency situation, briefs them about the basic use of coolants.
- The workshops service man prefers the premixed coolant as they are facing a difficulty in deciding the amount of water needed to mix while using concentrated type.
- Very few companies provide promotional schemes, though it is a major factor to attract the consumers.
- Though Castrol provides less margins and high in cost, most of the consumers prefer that as it has a strong brand image and consumers believe it is high in quality standards.
- LCV's like Goods auto etc. drivers prefer local brand and in loose quantity as they are more concerned about the price.
- In certain regions, Local brands have a strong base when compared to Global brands.
- Promotions and margins move in parallel in the sales of coolant and creates a great impact in selling a product.
- People are also developing and advancing in their thoughts and understanding the importance of each and every component in the automobiles. Hence with proper advertisement and product specifications the brand could have a good scope in the market.

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