

AI BASED DISCOURSE FOR VEHICAL DAMAGE INSURANCE - A LITERATURE SURVEY

Abstract. Insurers operate in a complex economic system where a reductionist analysis of claims to ascertain the key characteristics fails to take into account interdependency of the characteristics which may result in a mispricing of risks and a failure to detect emerging drivers of claims. This paper uses a technique that was developed for complex systems to analyse a large group of motor vehicle claims and concludes that the key characteristics for motor vehicle claims are limited and a lot of the characteristics used for ratings are of secondary value in influencing a claim, and hence of reduced value in the management of a block of motor vehicle insurance policies.

Keywords: Motor Vehicle Insurance, Insurance Ratings, Cladistics Analysis

JEL Classification: G17, G22

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1. Introduction

Insurance is a contract between an insurer (company) and the insured under which the insurer undertakes to compensate the insured for loss arising from the risk insured against. In consideration, the insured agrees to pay a sum called as Premium in advance. The instrument containing the contract of insurance is called as Policy. The thing, property or life, which forms basis of insurance, is called as subject matter of Insurance. The Insurance Act, 1938 was passed by the Legislature on 28th

February, 1938 and it came into force on 1st

July, 1938. It has been amended several times. It extends to whole of India. It is an Act to consolidate and amend the law relating to the business of insurance. Risk is there at every walk of life, also endangers life itself. In the same way all financial deals, as well as possession of money and property goods etc. are fraught with

the element of risk. If risks do not actually occur at all the times and hence, it is possible to calculate probable chances of any particular risk materializing. It is quite clear that all the people do not face risks at the same time. Thus, transfer of risk to another i.e. the insurer is in fact a pooling of the risks. If insurance did not exist, each individual had to bear the losses on his own. Insurance, in effect means that each one in the pool undertakes to bear a portion of the loss. Such an agreement has proved

to be advantageous to everyone as it is uncertain as to who will suffer the loss. Thus, in course of time, the idea developed that such a common pool of resources should be managed by experts who would calculate the quantity of the contribution to be levied on each individual. In this way the idea of Insurance developed. In modern times, the insurance has come to be highly commercial undertaking however, the principle is still the same viz., and the insurer collects premium for a large number of persons and covers them against a large variety of risks. Motor insurance is one of the largest non-life insurance of the world. This is because it is statutorily mandated in most parts of the world. If motor vehicles are required to be registered with the road transport authorities and insured for Third Party Liability. The basic premise is that the motor vehicle could either cause injury or to a subject of damage, and thus require insurance.

Literature review

- I. According to "The Effect of Automobile Insurance and Accident Liability Laws on Traffic Fatalities", Alma and Rajeew (2003) investigated the stimulant effects of automobile insurance, compulsory insurance laws, and no-fault liability laws on driver behavior and traffic fatalities by using instrumental variables approach. They said that the advantages provided by automobile [insurance](#) has moral hazard costs and the no-fault liability laws implied in accident liability have great adverse impacts on traffic fatalities.
- II. In "Auto Insurance and Traffic Fatalities", David (2015) examined the effect of drivers who are insured and uninsured on road safety. "The Effect of Automobile Insurance and Accident Liability Laws on Traffic Fatalities" (NBER Working Paper No. 9602) were used to measure the no-fault limits. He said drivers who remained uninsured will drive more cautiously because fear of being in an accident, so their number of fatalities will lower than the drivers who have insurance. The drivers who forced to buy insurance and now facing diminish...

INSURANCE:

Insurance is contract between an insurer and the insured under which undertakes to compensate the insured for loss arising from the risk insured against. In consideration, the insured agrees to pay a sum called as Premium in advance. The instrument containing the contract of insurance is called as the Policy. The things, property or life, which forms basis of insurance is called as subject matter of insurance. The Insurance Act, 1938 was passed by the Legislature on 26th February, 1968 and it came into force on 1st July, 1939. It has been amended several times. It extends to whole of India. It is an Act to consolidate and amend the law relating to the business of insurance. Risk is there at every walk of life, also endangers life itself. In the same way all financial deals, as well as possession of money and property goods, etc. are fraught with the element of risk. All risks do not actually occur at all times and hence, it is possible to calculate probable chances of any particular risk materializing. It is quite clear that all the people do not face risks at the same time. Thus, transfer of risk too another i.e. the insurer is in fact a pooling the risks. If insurance did not exist, each individual had to bear the losses on his own. Insurance, in effect means that each one in pool undertakes to bear a portion of the loss. Such an agreement has proved to be advantageous to everyone as it is uncertain as to who will suffer the loss. Thus, in course of time, the idea developed that such a common pool of resource should be managed by experts who would calculate the quantity of the contribution to be levied on each individual. In this way the idea of insurance developed. In modern times, the insurance has come to be highly commercial undertaking however the principle is still the same viz., and the insurer collects premium for a large number of persons and covers them against a large variety of risks

MOTOR INSURANCE:

Motor insurance is one of the largest non-life insurance of the world. This is because it is statutorily mandated in most parts of the world. All motor vehicles are required to be registered with the road transport authorities and insured for Third Party Liability. 11 The basic premise is that the motor vehicle could either cause injury or to a subject of damage, and thus require insurance. Motor insurance originated in U.K. where the first motor insurance policy was introduced into England in 1894 to cover third party liabilities. In 1899 this policy was extended to cover the

accidental damage similar to what is known as comprehensive policy. In 1903, the first company transact motor insurance was Car & General Insurance Corporation. After World War 1, there was a considerable increase in motor vehicles in all the countries and an increase in road accidents. This position warranted compulsory Third Party Liability insurance in England through Road Traffic Act, 1930 & 1934 which were subsequently consolidated by Road Traffic Act, 1960. In India, the Motor Vehicles Act was passed in 1939 and in 1946 the third party insurance was introduced compulsorily. The need for compulsory motor insurance was obvious. There has been a phenomenal rise in the motor accidents in the last 4-5 years. Much of these are attributable to a sudden rise in the number of vehicles. Every vehicle before being driven on roads has to be compulsorily insured. The automobile insurance policy represents a combined coverage of the vehicles including accessories, loss or damage to his property or life and the third party cover. The Motor Vehicle Act, 1939 introduced compulsory insurance to take care of those who get injured in an accident. The insurance for own vehicle damage is not mandatory. In India, the Tariffs Advisory Committee regulates this business

VEHICLE INSURANCE :

MEANING:

Vehicle insurance (also known as car insurance, motor insurance or auto insurance) is insurance for cars, trucks, motorcycles, and other road vehicles. Its primary use is to provide financial protection against physical damage or bodily injury resulting from traffic collisions and against liability that could also arise from incidents in a vehicle. Vehicle insurance may additionally offer financial protection against theft of the vehicle, and against damage to the vehicle sustained from events other than traffic collisions, such as keying, weather or natural disasters and damage sustained by colliding with stationary objects. The specific terms of vehicle insurance vary with legal regulations in each region.

DEFINITION:

Motor third-party insurance or third-party liability cover, which is sometimes also referred to as the 'act only' cover, is a statutory requirement under the Motor Vehicles Act. It is referred to as a 'third-party' cover since the beneficiary of the policy is someone other than the two parties involved in the contract (the car owner and the insurance

company). The policy does not provide any benefit to the insured. However, it covers the insured's legal liability for death/disability of third-party loss or damage to the third-party property.

FEATURES:

Comprehensive Cover □ The third-party cover is in-built within the policy (mandatory) that comes along with the purchase. □ This cover also includes any damage to one's own vehicle in case of an accident.

Premium Calculation □ The premium of the insurance policy depends on a variety of factors like: □ Model, capacity, and fuel type of your vehicle □ Place of residence □ Past claims experience □ Modifications done to the vehicle

Add-on Covers □ The no depreciation cover, □ No claims bonus and □ An assistance facility if the vehicle is stuck due to failure.

Cashless Facility □ Private insurers offer cashless facility to their customers for any damage of your vehicle. □ To avail this facility, it is necessary to take the vehicle to the network garages. □ Before you purchase or renew your policy, you can look at the network garages.

No-claims Bonus □ As with the Health Insurance policy, one can avail a benefit of a claim free year. □ This will enable one to avail significant discounts in the premium amounts if the policy is continuously renewed without any break within the admissible time limit of 90 days. □ Usually insurer declares the no-claim bonus beforehand, thus you can estimate while making a claim if it is worth giving up the no-claim bonus next year.

Deductible □ Whenever a claim is made, there is a certain amount that the owner must pay out of his own pocket. This is fixed at Rs. 50 for two-wheelers and Rs. 500 for cars. □ This deductible amount has been made mandatory to avoid any false claims on the insurer.

Exclusions There are certain exclusions to this policy which are as follows: □ Driver not holding valid license □ Driver being under the influence of drugs or liquor □ Normal wear and tear of the vehicle □ Depreciation □ Mechanical breakdown □ Using the vehicle for other purposes than recommended The above are some of the key features of a motor insurance policy that one must be aware of before buying one. However, if one has decided to insure his vehicle; it is important to have sufficient knowledge

about how to buy the policy and the documents that are required for the same.

IMPORTANCE OF VEHICLE INSURANCE IN INDIA:

Accidents are unfortunate events that can leave a tremendous lifetime burden if you are uninsured. This article details several reasons why you must go for vehicle insurance, apart from the fact that vehicle insurance in India is mandated by the law. Lack of proper infrastructure makes vehicle insurance in India a necessity. With the kind of traffic management we have in India, you will hardly find a day not seeing or at least hearing about vehicles banging into each other causing major damages. Haste and negligence on top of a poor infrastructure and lack of safety practices makes us at Risk of road accidents in India. India enjoys the dubious distinction of reporting the highest number of road fatalities in the world. In the year 2009, there were around 4.9 lakh road accidents in India, which resulted in the deaths of 1, 25, 660 people and injured more than five lakh persons. And, this does not include the smaller accidents, most of which go unreported. Another pertinent reason for the increase in the number of accidents is the fact that we are witnessing a very rapid growth in the number of vehicles, but paradoxically improvement in infrastructure is not in proportion. This exposes vehicle owners to a greater risk of accidents. One may be confident about his driving skills and would tend to avoid buying an insurance cover as it always pinches to pay the Premium especially when you do not have to make any claims. But you only realize the value of insurance, when you are in a situation and you may need to make a claim. But remember, no matter how good a driver you may be, you are always exposed to risk of getting hurt by somebody else's negligence. The consequences of an Accident can be severe, and besides financial loss and personal injuries it also causes severe mental stress. Having a motor insurance helps relieve a lot of your financial and mental pain.

1. CAR INSURANCE

This is the fastest growing segment in the insurance sector as car insurance is mandatory while buying a new car. Major car manufacturers are tying up with leading insurance companies to provide quick insurance to its customers. Car insurance covers loss or

damage by accident, fire, lightning, riots, earth quake, hurricane, terrorist attacks, explosion, theft, third party's claims and damages (like liability for third party injury or death, third party property and liability to paid driver). On payment of appropriate additional premium it covers loss or damage to electrical or electronic accessories and other significant items.

WHY YOU NEED CAR INSURANCE: Car insurance is required mainly for the following reasons:

1. **Mandatory by law:** The Motor Vehicles Act of India has made it compulsory for all vehicles used in public spaces to have car insurance. A third-party liability policy is compulsory for all vehicles, but you can decide to go for a comprehensive car insurance policy too. The reason why third-party liability insurance is mandatory is that in case of accidents, any damages or losses to the property of a third party along with injuries to the said person are covered.

2. **Effective investment:** Recent studies have shown that one in six car accidents take place in India. Whether you are at fault or not, these odds cannot be taken lightly. As such, having a comprehensive car insurance policy in place will ensure that your vehicle is covered for the costs incurred on repairs in case of accidents. It will also cover the policyholder for any bodily injuries. In case of collisions with other vehicles, the compensation could run into thousands of rupees, perhaps lakhs. Your car insurance policy will help you breathe easy and cover the costs for you in exchange for a nominal premium, making it a worthwhile investment.

3. **Offers peace of mind:** Having a car insurance policy offers peace of mind in the sense that you can cruise on a highway or even squirm through peak traffic without having to worry about the consequences of potential accidents. Sometimes, even the tiniest of scratches to another vehicle could urge the driver to create a scene on the road and demand money for repairs. With car insurance, you can put these worries in the back seat and drive easy.

4. **Health insurance boost:** Many of the car insurance policies out there provide coverage for the injuries you sustain, or the injuries sustained by your fellow passengers during an accident. If the policy you choose does not offer this cover, you can always purchase

personal injury protection as an add-on cover, and it will boost your health insurance, covering things that may not be covered by your health insurance plan.

5. Saving time: Meeting with an accident can be quite stressful. You have to get your vehicle repaired, pay for the expenses incurred on repairing the vehicle of a third party, pay for the treatment of any injuries sustained by you or a third party, making claims, finding a good garage, etc. Basically, you will have to run around a lot. But with car insurance, your stress can be significantly lower and you can also save a good amount of time as the insurance company will handle everything for you.

PARAMETERS OF PREMIUM Car insurance components is combination of own damage and third party liability coverage. Own damage part of the insurance covers any damages and theft (total or partial) of the car whereas third part) covers any damages and injury caused to a person and property by the insured car. The primary factors that determine car insurance premium are the make and model of the car, age of the car and city of registration on the basis of IDV (Insured Declared Value). The procedures for car insurance segment are determined on the company package policy are mentioned below :

Insured Declared Value (IDV) The make and model of the car and age together form the basis for arriving at the IDV of the car. All vehicles are insured at the fixed IDV. This is calculated based on the car ex-showroom price (and the listed price of any electrical and non electrical 24 accessories) after deducting the depreciation for every year, as per the schedule provided by Tariff Advisory Committee (TAC). Now consider electrical and non electrical accessories like music system, air conditioner, fog lights, overhead carrier, seat covers, etc. If one opts for top of the line stuff, insuring them is a must, which again will add to the value of the car and hence it would get added to the cost of individual premium. Adding a Compressed Natural Gas (CNG) kits to individual will further increase individual premium.

□ **Age** The age for car is explained in form of example: - Suppose a car that is less than 6 months old will incur a depreciation of 5%, compared to 30% for car that is more than two years old but not

exceeding 3 years. Apart from usage in calculation of IDV, age is also used to arrive at the rate based on loss experience.

□ **Make / Model** Generally, the more expensive car the higher is the car insurance premium. So insuring a BMW (Bavarian Motor Works) will definitely be more expensive than insuring a Maruti car. However, value of the car is not the only determinant of premium but most of the insurance companies follow "Risk Based Pricing" approach wherein historical loss experience and risk assessment methods are considered for deciding premium rates. Such rates when multiplied by IDV gives the final Premium.

□ **Location or city** As we know that more cars sold in a particular city means more cars on the road. This high level of penetration may result in a higher probability of accidents as compared to a city where there are fewer cars. Apart from density of cars, other factors such as infrastructure, usage of the cars or driving habits are expected to have impact on accidents. Hence location is one of the important factors while determining the premium.

HOW TO PURCHASE A NEW CAR INSURANCE: Car insurance can be purchased through agents, dealers, or brokers.

□ **Agents** Insurance agents work with insurance companies and are paid by the company to sell their products to customers. As such, agents are experts so far as the insurance products offered by their employers are concerned. They have the ability and the expertise to guide you and help you choose the policy that best suits your needs. If you wish to change your insurance company, you should find another insurance agent who works with the company from which you wish to purchase insurance.

□ **Dealers** Automobile dealers sell vehicles to customers, and these vehicles are sold with third-party liability insurance. Generally, dealers have tie-ups with insurance companies and may not be experts regarding the insurance policies. They take care of the 26 paperwork associated with availing a third-party liability insurance policy sold by the dealership, but do not have adequate knowledge to guide you to find the policy that best suits your requirements.

❑ **Brokers** Brokers can either be individuals or companies that have a license from the Insurance Regulatory and Development Authority of India to sell insurance products. The products sold by brokers can be from various insurance companies as they have the expertise required to help you make an informed choice. They also offer assistance in after-sales service. Brokers can help you compare various policies in an effort to find the best one for you. Brokers can also assist you through the claim settlement process.

TWO WHEELER INSURANCE PLANS:

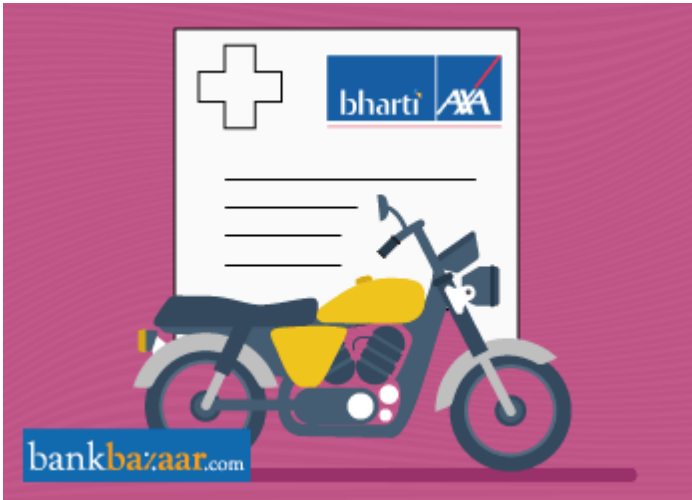
Insurance companies offer several incentives to prospective customers in the form of long-term bike insurance policies, NCB benefits, etc. Vehicle owners may be confused on the benefits offered by each of the policies. Look no further; given below is a representative list of some of the best two wheeler insurance policies currently available.

Oriental Bike Insurance



Incurred Claim Ratio	68.19%
Cashless Network Garages	200+
Policy Term	1-5 yr

Bharti AXA Bike Insurance



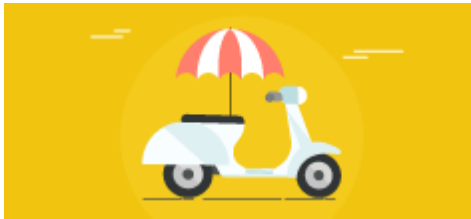
Incurred Claim Ratio 121.67%
Cashless Network Garages
Available Policy Term 1 – 5 years

Personal Accident Cover for Pillions:



When you supplement your bike insurance policy with a personal accident cover for pillion, your financial liability can be lowered significantly in case of accidents where the pillion rider is injured. This add-on feature provides coverage for the death or permanent or partial disability of the pillion rider

Roadside assistance:



By purchasing the roadside assistance add-on cover, you can avail roadside assistance at any time in case of a mechanical failure or the breakdown of your vehicle. This feature offers facility such as free towing, immediate repairs, etc. and it comes in very handy especially when you are travelling to a remote place where it is difficult to find help

Accessories cover:



Having this add-on cover will provide coverage for all the accessories of the two wheeler, electrical or non-electrical. In case any of the accessories of the vehicle is damaged, the rider will cover the cost to repair or replace it

Daily cash allowance:



The daily cash allowance add-on cover is ideal for those who commute solely on two wheelers. In case your bike is seriously damaged and is undergoing repairs at a garage, you may have to incur out-of-pocket expenses to travel without it. Adding the daily cash allowance cover to your two wheeler insurance policy will mean that your insurer will give you a certain amount of money per day to meet your travel expenses.

Engine cover:



The engine cover can come in very handy if the engine of your two wheeler or the ancillary circuit gets damaged because of flooding or waterlogging. Considering the cost of repairs to engines can extend to several thousands of rupees, the engine cover will cover these expenses and allow you to have total peace of mind.

RENEWALS

❑ **Online renewal** Since all major insurance companies have their own websites, you can simply log in to them and follow the instructions to renew your bike insurance online. All you have to do is ensure that you enter the correct information regarding your policy as well as your personal details into the system. The old policy must be with you when you are renewing it as it will be easier to refer for details like old policy

number. Your net banking details and your debit/credit card must also be kept handy so that information can be entered quicker and your renewal process is smooth and hassle-free. Insurers usually generate digital policies in the PDF format once you pay the premium when renewing your plan. The PDF can be saved on your system but make sure that you take a print out and keep the document with you when you ride.

□ **Renewal at a branch** If you wish to take the old-fashioned route, you can visit a branch of the insurance company to renew your two wheeler insurance policy. While the process of renewing your bike insurance plan at a branch of the insurance company is simple, you will have to take the time out to physically visit the branch. You will have to carry your 49 old policy along with details regarding the vehicle so that you can fill them out in the application form. When you renew your insurance policy at a branch office, the new policy will be handed to you immediately if the premium payment is made by debit card, demand draft, or cash. Paying the premium by cheque will mean that it will take some time to clear so your policy will be sent to your residential address by mail at a later date.

□ **Through mobile applications** Considering the fact that a large number of insurance companies have launched their own mobile apps or tied up with mobile payment vendors, renewing your bike insurance policy is as easy as it gets. The applications request certain information such as the registration number of the vehicle, the name of the manufacturer, the make and model of the vehicle, etc. The apps also need details of your policy, such as the name of the insurer, the policy number, etc. By filling in these details and paying the premium, your motorcycle insurance policy can be renewed quickly and without any hassle.

RENEWAL PROCESS Insurance companies have made it relatively easy for customers to renew their motorcycle insurance policies online. In case your policy has expired and you do not wish to renew it as you want to purchase another policy, you can do so easily on the website of the company from which you purchased the plan.

CLAIM PROCESS Considering most insurance companies are customer-conscious, their claims process is relatively simple and you can file claims with no hassles. The entire claims process includes a

few steps like intimating the insurer about the claim, filing an FIR with the nearest police station, transporting the two wheeler to the garage, furnishing the necessary documents along with the claim form, etc. In many cases, the insurer tends to cover all the costs incurred as a result of an accident, with the owner of the vehicle having to bear certain expenses that are not covered by the insurance policy, such as the taxes and service charges. Considering how tedious the claims process can be at times, you can take help from the insurance company.

TOP TWO WHEELER INSURANCE COMPANIES IN INDIA:

The best insurance companies are those that have the highest incurred claim ratio and provide the best customer service. These two factors along with cashless claim settlement facility are the important factors to look at the time of picking an insurer. Listed below are some of the best insurance companies in the country:

1. Bajaj Allianz General Insurance Company
2. HDFC Ergo General Insurance Company
3. Bharti AXA Motor Insurance Company
4. National Insurance Company
5. IFFCO Tokio Insurance Company
6. New India Assurance Company Limited
7. L&T Motor Insurance Company
8. SBI General Insurance Company
9. Royal Sundaram Alliance Insurance Company
10. Tata AIG Motor Insurance Company
11. Reliance General Insurance Company

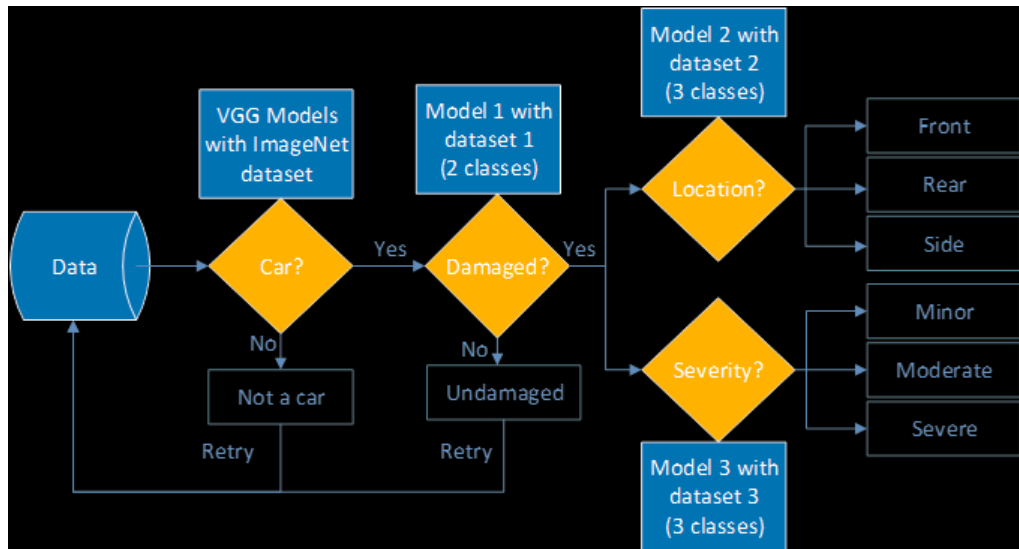
DATA ANALYSIS:

3 Piece Pie Chart Showing the Market Share of Insurance Industry

This slide is 100% editable. Adapt it to your needs and capture your audiences.



OVERALL REVIEW :



CONCLUSION:

The Indian insurance industry cannot continue its old practices in the motor-portfolio on which it has been operating since the nineties. Insurers in India have to keep pace with the changing times and innovations. Demand in the motor market is growing at steady rate. More and more automobiles will hit the Indian roads, so the growth is assured. Product innovations and price differentiation will matter but not in immediate future till the portfolio remains in the tariff regime. Competition in motor insurance will therefore be for resources and competence in operations. One must compare and choose the best vehicle insurance policy. Buying an insurance policy, besides addressing your personal security, is also a social responsibility as insurance, as a concept is successful, only if there is mass participation. There are a host of insurance providers in India who offer various types of vehicle insurance policy to suit the varying needs of individuals. It is always advisable to do an online comparison of the premiums and benefits that are being offered by different insurance providers before buying a policy.