**AUTOINLAND VEHICLE INSURANCE CLAIM CHALLENGE**

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Can you predict if a client will submit a vehicle insurance claim in the next 3 months?

it provides insurance and filing and settlement of claims.

[https://zindi.africa/competitions/autoinland-vehicle-insurance-claim-challenge]

Three specific areas of the peer-production economy – ride-sharing, car-sharing and space-sharing – have offered some of the thorniest coverage questions for personal lines insurers, for regulators and for the general public. As a growing number of private individuals look to earn ancillary income streams by renting out their cars or by providing ad hoc livery and limousine services, what are the consequences for the home and auto insurance markets?

Do personal lines policies offer liability coverage when amateurs turn professional? Who should provide coverage – the peer production service, or the individual drivers and renters? And what thresholds should be set for when and how much coverage must be obtained to ensure that consumers are appropriately protected?

. This paper looks to explore some of the pressing insurance issues within one specific subset of the peer production economy – ride-sharing – and will conclude with some broad recommendations about ways both regulators and market participants could address those issues in the months and years ahead.

[R.J. Lehmann, “BLURRED LINES: INSURANCE CHALLENGES IN THE RIDE-SHARING MARKET,” R Street Institute, October 2014.]

Vehicle insurance is an insurance designed for cars, trucks, motorcycles, and other road vehicles. It is used to provide financial protection against the damage of the vehicle and a bodily injury resulting from traffic collisions. Moreover, it hedges against the liability which could arise in a traffic accident. The specific terms for vehicle insurance and its type vary with legal regulations.

The process, by which insurers determine whether to insure an applicant and which premium to charge, is called vehicle insurance risk selection.

The annual frequency of the claims is calculated from the number of the claims on a contract. They depend on many factors that are believed to have an impact on the expected cost of future claims. Those factors can include the car characteristics (vehicle body, vehicle age) and the profi le of the driver (age, gender, driving history).

We take into account these fi ve factors – vehicle body type, vehicle age, area of residence, gender of policyholder and age band of policyholder.

The aim of this paper is to develop a suitable model for an annual frequency of claims from which the premium in vehicle insurance is derived. Based on this model, the actuary can determine an adequate insurance premium for each group of drivers. The analysis of deviance and the Akaike information criterion are used for comparison of the examined models.

Every person, when applying for vehicle insurance policy, is assigned to a class, that is homogeneous in terms of risk. One of the criteria used for assigning an individual to a certain class is the number of claims. Thus, it is very important task for insurance companies to model the number of claims in a given insurance portfolio. Our aim is to predict relation of annual claim frequency on given risk factors. A data set from vehicle insurance will be processed. The data for our case study can be found in (Heller and Jong, 2008). The data set is based on one-year vehicle insurance policies recorded in 2004 or 2005. There are 57 410 policies and 3 913 of them (6.82%) have at least one claim. The total amount of claims is 4 176. We see, that the histogram of annual claim frequency is strongly right-skew (Fig. 1).

The GLMs are suitable for analysis of non-normal data, i.e. insurance data. Necessary procedures are implemented in R software environment.

[KAFKOVÁ SILVIE, KŘIVÁNKOVÁ LENKA. 2014. Generalized Linear Models in Vehicle Insurance. Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 62(2): 383–388.]

Vehicle insurance is a significant portion of total vehicle costs. Vehicle insurance is generally considered a fixed cost with respect to vehicle use. Motorists do not usually perceive insurance cost savings when they reduce mileage. Vehicle insurance is a significant portion of total vehicle costs, averaging hundreds of pounds per vehicle-year. Insurance is currently considered a fixed cost with respect to vehicle use; a reduction in mileage does not usually provide a comparable reduction in insurance premiums.

Research indicates that within existing price categories, annual claims increase with annual vehicle mileage.

This paper describes and evaluates PAYD, based on North American research and experience. It indicates that PAYD pricing is technically and economically feasible, and can provide significant benefits to motorists and society.

[Todd Alexander Litman “Implementing Pay-As-You-Drive Vehicle Insurance Policy Options” July 2002 Victoria Transport Policy Institute.]

Given the upward trend in incidences of road traffic accidents (RTAs) over recent years, in order to mitigate the financial losses arising from such accidents, governments around the world nowadays generally encourage, or even require, drivers to purchase appropriate vehicle insurance.

[Yung-ChingHsu, Yung-MingShiu, Pai-LungChou, Yen-Ming J. Chend “Vehicle insurance and the risk of road traffic accidents” Transportation Research Part A: Policy and Practice Volume 74, April 2015, Pages 201-209 [https://doi.org/10.1016/j.tra.2015.02.015](https://doi.org/10.1016/j.tra.2015.02.015" \o "Persistent link using digital object identifier" \t "_blank)]

Automatically scene understanding using machine learning algorithms has been widely applied to different industries to reduce the cost of manual labor. Nowadays, insurance companies launch express vehicle insurance claim and settlement by allowing customers uploading pictures taken by mobile devices. This kind of insurance claim is treated as small claim and can be processed either manually or automatically in a quick fashion.

[Pei Li, Bingyu Shen, Weishan Dong “An Anti-fraud System for Car Insurance Claim Based on Visual Evidence” Mon, 30 Apr 2018 <https://doi.org/10.48550/arXiv.1804.11207>]

Risk models need to be estimated by the insurance company in order to predict the magnitude of the claim and determine the premiums charged to the insured. This is intended to prevent losses in the future.

[Sukono et al 2018 IOP Conf. Ser.: Mater. Sci. Eng. **300** 012027

Sukono, Riaman, E. Lesmana, R. Wulandari, H. Napitupulu and S. Supian “Model estimation of claim risk and premium for motor vehicle insurance by using Bayesian method” IOP Conference Series: Materials Science and Engineering, Volume 300, 4th International Conference on Operational Research (InteriOR)21–23 August 2017, Medan, Indonesia]