



**THE APPLICATION OF LINEAR EMPIRICAL
BAYESIAN (LEB) METHOD TO DETERMINE THE
PREMIUM IN MOTOR VEHICLE INSURANCE**

UNDERGRADUATE THESIS

Submitted as one of the requirements to obtain

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CIKARANG

OCTOBER, 2023

PLAGIARISM REPORT

Thesis Falah R Tamaela - 021201900011-2.

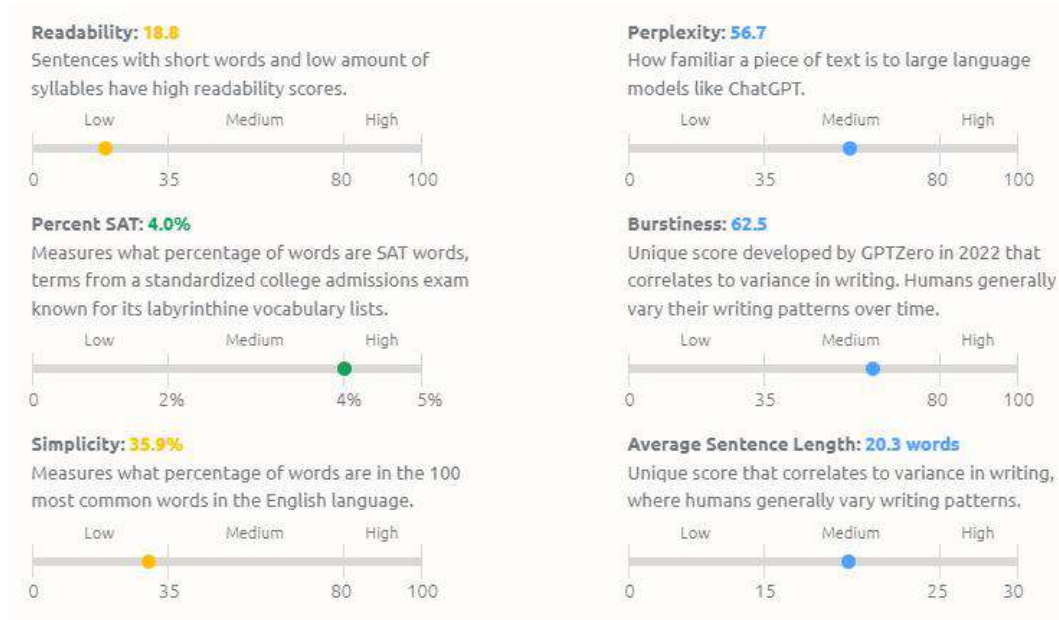
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ABSTRACT

Insurance is necessary nowadays, because insurance can cover a loss or damage that occurs. The way insurance works in order to cover losses, a person can submit a claim provided that the person is registered as a customer and is obliged to pay dependents. In this case the dependents are called premiums. The amount of premium obtained comes from many factors, for example in motor vehicle insurance seen from the condition of the vehicle, claim frequency, and claim amount. Then the data obtained is calculated using a method that supports the determination of premiums, one of which is the Linear Empirical Bayesian method. In this study, calculations were carried out to determine the amount of premium using the Linear Empirical Bayesian method, where this method was used to find the estimated expected value of XYZ insurance data in the form of claim frequency in 2020 and claim amount in 2015 and 2020. In the analysis, the estimated expectation of the claim frequency $E(K)=0.89393$ and the optimal expectation of the claim amount $E(X)=\$434.11$ are obtained, then the results are multiplied to determine the amount of premium in the future, with the formula $P=E(K) \times E(X)$, $P=0.89393 \times \$434.11$ and the result is \$388.07.

Keywords: *Motor Vehicle Insurance, Linear Empirical Bayesian Method, Premium Price, Expected Claim Frequency, Optimal Estimated of Claim Amount*

ABSTRAK

Asuransi sangat diperlukan saat ini, karena asuransi dapat menanggung kerugian atau kerusakan yang terjadi. Cara kerja asuransi untuk menanggung kerugian, seseorang dapat mengajukan klaim dengan syarat orang tersebut terdaftar sebagai nasabah dan berkewajiban membayar tanggungan. Dalam hal ini tanggungan tersebut disebut dengan premi. Besarnya premi yang diperoleh berasal dari banyak faktor, misalnya pada asuransi kendaraan bermotor dilihat dari kondisi kendaraan, frekuensi klaim, dan jumlah klaim. Kemudian data yang diperoleh dihitung dengan menggunakan metode yang mendukung dalam penentuan premi, salah satunya adalah metode Linear Empirical Bayesian. Pada penelitian ini, dilakukan perhitungan untuk menentukan besarnya premi dengan menggunakan metode Linear Empirical Bayesian, dimana metode ini digunakan untuk mencari nilai taksiran ekspektasi dari data asuransi XYZ yang berupa frekuensi klaim pada tahun 2020 dan jumlah klaim pada tahun 2015 dan tahun 2020. Dalam analisisnya, didapatkan nilai ekspektasi frekuensi klaim $E(K)=0.89393$ dan ekspektasi optimal jumlah klaim $E(X)=$434.11$, kemudian hasil tersebut dikalikan untuk menentukan besarnya premi di masa yang akan datang, dengan rumus $P = E(K) \times E(X)$, $P = 0.89393 \times \$434.11$ dan hasilnya \$388.07.

Kata Kunci: *Asuransi Kendaraan Bermotor, Metode Bayesian Empiris Linier, Harga Premi, Frekuensi Klaim yang Diharapkan, Estimasi Jumlah Klaim yang Optimal*

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