

INTISARI

Analisis Cadangan Klaim Menggunakan *Generalized Linear Model* dan *Hierarchical Generalized Linear Model*

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Cadangan klaim merupakan salah satu permasalahan penting pada asuransi kerugian. Pada asuransi kerugian, klaim terhubung dengan periode dibayarnya premi. Pemodelan seperti ini dapat menggunakan kerangka *run-off triangle*. Metode *Chain-Ladder* merupakan salah satu metode prediksi cadangan klaim yang bekerja pada skema *run-off triangle* kumulatif. Metode *Chain-Ladder* memberikan hasil cadangan klaim yang sama dengan model *overdispersed poisson* dari *Generalized Linear Model*. Kelebihannya model *overdispersed poisson* memberikan ukuran kesalahan prediksi. Namun model *overdispersed poisson* mengasumsikan data independen tanpa memperhitungkan karakteristik periode kejadian yang mempengaruhi prediksi dan kesalahan prediksi model. Model *overdispersed poisson-gamma* dari *Hierarchical Generalized Linear Model* mempertimbangkan karakteristik periode kejadian yang mempengaruhi prediksi cadangan klaim. Selain itu, model *overdispersed poisson-gamma* memberikan nilai kesalahan prediksi yang lebih kecil dibandingkan dengan model *overdispersed poisson*.

Kata Kunci: Asuransi Kerugian, Cadangan Klaim, Skema *Run-off Triangle* Data, *Generalized Linear Model*, *Hierarchical Generalized Linear Model*, Kesalahan Prediksi.

ABSTRACT

Claims Reserving Analysis Using Generalized Linear Model and Hierarchical Generalized Linear Model

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Claims reserving is one of important issues in general insurance. In general insurance, claims are connected to the payment premium-due. When modelling this situation, run-off triangle frameworks can be used. In practice, the most popular statistical method in the claims reserving literature is Chain-Ladder method that works in cumulative run-off triangle frameworks. Chain-Ladder method gives the same reserve as Overdispersed Poisson model, from Generalized Linear Model. In addition, the prediction error of Overdispersed Poisson model is measurable. However, the model assumes that independent data without taking into account the characteristics of the accident period that affect to the prediction error. Overdispersed Poisson-Gamma model from Hierarchical Generalized Linear Model considers the characteristics of accident period that affect claims reserve prediction. In addition, the prediction error value of this model is smaller than the Overdispersed Poisson model.

Keywords: General Insurance, Claims Reserve, Run-off Triangle Data Framework, Generalized Linear Model, Hierarchical Generalized Linear Model, Prediction Error.