

## Penentuan premi kredibilitas multiple period pada model kredibilitas buhlmann = Determination of multiple period credibility premium on buhlmann's credibility model

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### Abstrak

<b>ABSTRACT</b><br>

Model kredibilitas Buhlmann umumnya digunakan untuk memprediksi besar tarif premi untuk setiap pemegang polis pada periode ke-(n+1) berdasarkan riwayat klaim sebanyak periode atau model one period. Pada skripsi ini dilakukan generalisasi terhadap model kredibilitas Buhlmann one period yang disebut sebagai model kredibilitas Buhlmann multiple period. Model multiple period memungkinkan insurer memprediksi besarnya tarif net premium tidak hanya satu periode ke depan tetapi juga beberapa periode ke depan berdasarkan riwayat klaim sebanyak periode. Model yang dibangun memberikan bobot kepada future claim dan anticipating premium. Untuk meminimalkan selisih besarnya premi multiple period terhadap future claim maupun anticipating premium digunakan masalah pemrograman kuadratik. Masalah pemrograman kuadratik diselesaikan dengan menggunakan kondisi Karush-Kuhn-Tucker. Dengan mengaplikasikan konsep model multiple period terhadap data real terlihat bahwa model kredibilitas Buhlmann multiple period memberikan besar tarif premi yang lebih adil untuk setiap pemegang polis dibandingkan menggunakan model kredibilitas one period. Diharapkan dengan menggunakan model multiple period, insurer dapat melakukan perencanaan jangka panjang lebih baik serta meningkatkan keefektifitasan kinerja.

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<b>ABSTRACT</b><br>

Buhlmann credibility model generally used to predict premium tariff for each policyholder at period based on period history claim or also called one period model. In this thesis, Buhlmann credibility model is generalized or also called multiple period model. Multiple period model allows insurer to predict amount of premium not only one period ahead but also few period ahead based on period history claim. The model is considering two important component, which are future claim and anticipating premium and gives weight for each component. To minimize the difference between premium multiple period and future claim also between premium multiple period and anticipating premium, quadratic programming problem is used on this thesis. Quadratic programming problem is solved by Karush-Kuhn-Tucker conditions. By applying the concept of multiple period models to real data, it can be seen that the Buhlmann multiple period credibility model gives premiums more fair for each policyholder than using the one-period credibility model. By using this model, hopefully insurer enable to conduct long-term financial planning and increase effectiveness of work.