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1.4.7 Poisson-LogNormal Distribution1.5 Statistical Inference for Discrete Distributions; 1.5.1 Maximum Likelihood Estimators; 1.5.2 Properties of the Maximum Likelihood Estimators; 1.5.3 Computing the Maximum Likelihood Estimators with the Newton-Raphson Algorithm; 1.5.4 Hypothesis Tests; 1.6 Numerical Illustration; 1.7 Further Reading and Bibliographic Notes; 1.7.1 Mixed Poisson Distributions; 1.7.2 Survey of Empirical Studies Devoted to Claim Frequencies; 1.7.3 Semiparametric Approach; 2 Risk Classification; 2.1 Introduction; 2.1.1 Risk Classification, Regression Models and Random Effects 2.1.2 Risk Sharing in Segmented Tariffs2.1.3 Bonus Hunger and Censoring; 2.1.4 Agenda; 2.2 Descriptive Statistics for Portfolio A; 2.2.1 Global Figures; 2.2.2 Available Information; 2.2.3 Exposure-to-Risk; 2.2.4 One-Way Analyses; 2.2.5 Interactions; 2.2.6 True Versus Apparent Dependence; 2.3 Poisson Regression Model; 2.3.1 Coding Explanatory Variables; 2.3.2 Loglinear Poisson Regression Model; 2.3.3 Score; 2.3.4 Multiplicative Tariff; 2.3.5 Likelihood Equations; 2.3.6 Interpretation of the Likelihood Equations; 2.3.7 Solving the Likelihood Equations with the Newton-Raphson Algorithm 2.3.8 Wald Confidence Intervals2.3.9 Testing for Hypothesis on a Single Parameter; 2.3.10 Confidence Interval for the Expected Annual Claim Frequency; 2.3.11 Deviance; 2.3.12 Deviance Residuals; 2.3.13 Testing a Hypothesis on a Set of Parameters; 2.3.14 Specification Error and Robust Inference; 2.3.15 Numerical Illustration; 2.4 Overdispersion; 2.4.1 Explanation of the Phenomenon; 2.4.2 Interpreting Overdispersion; 2.4.3 Consequences of Overdispersion; 2.4.4 Modelling Overdispersion; 2.4.5 Detecting Overdispersion; 2.4.6 Testing for Overdispersion; 2.5 Negative Binomial Regression Model 2.5.1 Likelihood Equations

Sommario/riassunto

There are a wide range of variables for actuaries to consider when calculating a motorist's insurance premium, such as age, gender and type of vehicle. Further to these factors, motorists' rates are subject to experience rating systems, including credibility mechanisms and Bonus Malus systems (BMSs). Actuarial Modelling of Claim Counts presents a comprehensive treatment of the various experience rating systems and their relationships with risk classification. The authors summarize the most recent developments in the field, presenting ratemaking systems, whilst taking into account e
