

Discrete distributions when modelling the disability severity score in motor insurance claims *

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Abstract

Bodily injury claims have the greatest impact on the claim costs of motor insurance companies. The disability severity of motor claims is assessed in numerous European countries by means of score systems. In this paper (zero-altered) discrete regression models are implemented to estimate the disability severity score of victims involved in motor accidents on Spanish roads. We show that the injury severity estimates may be automatically converted into financial terms by insurers. As such, the methodology described may be used by motor insurers operating in the Spanish market to monitor the size of bodily injury claims. By using insurance data, applications with financial implications are presented in which the score estimate of disability severity is of value to insurers' decisions, either for negotiation the claim compensation or for reserving reported claims.

Keywords: Motor accident, disability severity, zero-inflated generalized Poisson model, disability scoring scale.

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