Eichenauer, Jürgen; **Lehn, Jürgen**; **Rettig, Stefan**
A gamma-minimax result in credibility theory. (English) Zbl 0639.62089
Insur. Math. Econ. 7, No. 1, 49-57 (1988).

From the introduction: "Within the framework of statistical decision theory, many credibility formulae can be established as optimal strategies with respect to the Bayes principle of game theory, i.e., they are estimators being optimal in the sense that they minimize the mean value of the expected loss with respect to a prior probability.

For getting better statistical models, strategies which are not compatible with the actuary's information should be excluded, i.e., the set of nature's mixed strategies should be restricted. The principle which takes this aspect into account is the so-called gamma-minimax principle, an intermediate approach between the minimax and the Bayes principle.

We derive credibility formulae which are gamma-minimax with respect to vague prior information given by moment restrictions on the priors in case of gamma distributed risk performances and squared error loss."

Reviewer: A.Reich

MSC:

62P05 Applications of statistics to actuarial sciences and financial mathematics
62C10 Bayesian problems; characterization of Bayes procedures

Keywords:

premium calculation principles; Bayes principle; gamma-minimax principle; credibility formulae; vague prior information; moment restrictions; gamma distributed risk performances; squared error loss

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