

**ESTIMATION OF THE PROBABILITY OF CORRECT SELECTION  
BETWEEN DISTRIBUTIONS INVERSE-GAUSSIAN AND  
LOG-NORMAL VIA RATIO OF LIKELIHOODS AND  
METHODS BASED ON DISTANCES**

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- **ABSTRACT:** *The Inverse-Gaussian and Log-Normal distribution are two distributions widely used in the analysis of survival data. In many practical situations they compete among themselves in the modeling of the same data set. This paper seeks to discriminate between the two distributions using the likelihood ratio test and eight other based on statistics used to evaluate the goodness of fit. These methods basically calculate the distance between the theoretical distribution function and empirical distribution function. Using Monte Carlo simulations and considering various scenarios, the probability of correct selection was estimated for all methods. The simulation study showed that in some scenarios the methods evaluated have a low probability of correct selection, even for reasonably large sample sizes. For illustrative purposes six real data sets, taken from the literature, were analyzed.*
- **KEYWORDS:** *Inverse-Gaussian distribution; Log-Normal distribution; likelihood ratio test; empirical distribution function; probability of correct selection.*

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