Adjusted maximum likelihood estimation of the moments of lognormal populations from type 1 censored samples

Dept. of the Interior, U.S. Geological Survey - A consistent parameter estimation in the three


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Estimating the parameter of Exponential distribution under Type-II censoring from fuzzy data

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Statistical analysis of lifetime distributions under Type-II censoring scheme is based on precise lifetime data. However, in real situations all observations and measurements of Type-II censoring scheme are not precise numbers but more or less non-precise, also called fuzzy. This paper deals with the estimation of exponential mean parameter under Type-II censoring scheme when the lifetime observations are fuzzy and are assumed to be related to underlying crisp realization of a random sample. We use Newton-Raphson algorithm as well as EM algorithm to determine the maximum likelihood estimate (MLE) of parameter. We also obtain the estimate, via moment method and Bayesian procedure, of the unknown parameter. In addition, a new numerical method for parameter estimation is provided. Monte Carlo simulations are performed to investigate performance of the different methods. Finally, an example is presented in order to illustrate the methods of inference discussed here.

Keywords: Type-II censoring; Fuzzy lifetime data; Exponential distribution; Maximum likelihood estimation; Bayes estimator.

2000 Mathematics Subject Classification: 62N02, 62N86

1. Introduction

In life testing and reliability studies, the experimenter may not always obtain complete information on failure times for all experimental units. Data obtained from such experiments are called *censored data*. One of the most common censoring scheme is Type-II (failure) censoring, where the life testing experiment will be terminated upon the r-th (r is pre-fixed) failure. This scheme is often adopted for toxicology experiments and life testing applications by engineers as it has been proven

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Chapter 4 Estimation methods

As the term implies, probability plotting involves a physical plot of the data on specially constructed probability plotting paper.

Likelihood computations and random numbers in R

The method of maximum likelihood estimation is backed by a vast statistical literature that shows it has certain properties that may be considered optimal. The idea behind the use of non-informative prior distributions is to make inferences that are not greatly affected by external information or when external information is not available. Cambridge : Cambridge University Press MLA Citation Aitchison, J.

Introduction to Maximum Likelihood Estimation in R

To determine this number, consider the following: We can find the number of ways the second failure can occur in either order number 2 position 2 or order number 3 position 3. If you find a different solution i. A parameter is a number that can describe the population.

Maximum likelihood parameter estimation in the three

In , MLE is a special case of an , with the objective function being the likelihood.

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