SMALL-SAMPLE PERFORMANCE OF A MODIFIED LEAST-FAILURES SAMPLING PROCEDURE FOR BERNOULLI SUBSET SELECTION

Abstract

We describe two sequential sampling procedures for Bernoulli subset selection which were shown to exhibit desirable behavior for large-sample problems. These procedures have identical performance characteristics in terms of the number of observations taken from any one of the populations under investigation, but one of the procedures employs one-at-a-time sampling while the other allows observations to be taken in blocks during early stages of experimentation. In this paper, a simulation study of their behavior for small-sample cases ($n \leq 25$) reveals that they can result in a savings (sometimes substantial) in the expected total number of observations required to terminate the experiment as compared to the single-stage procedure. Hence they may be quite useful to a practitioner for screening purposes when sampling is limited.

Full citation: