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**Moment inequalities for HNBRUE with hypothesis testing application**

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**Abstract**

The paper deals with life distributions which are harmonic new better than renewal used in expectation (HNBRUE). The goal is to derive moment inequalities and use them for further analysis of the class HNBRUE. We establish new characterization of exponentiality versus HNBRUE. Pitman's asymptotic relative efficiency is employed to assess the performance of the proposed test with respect to other available tests. Finally, we carried out numerical simulation to produce table for the critical values of the test. © 2009 Elsevier B.V. All rights reserved.

**Author Keywords**

Asymptotic efficiency; Characterization of exponentiality; Life distributions; Moment inequalities; Moment uniqueness

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