Bhati, Deepesh; Bakouch, Hassan S.
A new infinitely divisible discrete distribution with applications to count data modeling.
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Summary: A new discrete distribution involving geometric and discrete Pareto as special cases is introduced. The distribution possesses many interesting properties like decreasing hazard rate, zero vertex uni-modality, over-dispersion, infinite divisibility and compound Poisson representation, which makes the proposed distribution well suited for count data modeling. Other issues including closure property under minima, comparison of its distribution tail with other distributions via actuarial indices are discussed. The method of proportion and maximum likelihood method are presented for parameter estimation. Finally the performance of the proposed distribution over other classical and newly proposed infinitely divisible distributions are discussed.

MSC:
60E05 Probability distributions: general theory
62E15 Exact distribution theory in statistics

Keywords:
Hurwitz Lerch zeta function; infinitely divisible discrete distributions; right tail index; zero inflation index

Full Text: DOI

References:


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