

Type II Family of Bivariate Inflated-Parameter Generalized Power Series Distributions

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The family of Inflated-parameter Generalized Power Series distributions (IGPSD) was introduced by Minkova in 2002 as a compound Generalized Power Series distributions (GPSD) with geometric compounding distribution. In these notes we introduce a family of compound GPSDs with bivariate geometric compounding distribution. The probability mass function, recursion formulas, conditional distributions and some properties are given. A member of this family is a Type II bivariate Pólya-Aeppli distribution, introduced by Minkova and Balakrishanan (2014). In this notes the particular cases of bivariate compound binomial, negative binomial and logarithmic series distributions are analyzed in detail.