

A Quasi Poisson-Garima Distribution with Properties and Applications

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ABSTRACT

A quasi Poisson-Garima distribution has been proposed by compounding Poisson distribution with quasi Garima distribution. The Poisson Garima distribution is a special case of the quasi Poisson-Garima distribution. The general expression for the factorial moments has been derived and hence the first four moments about origin and the moments about the mean have been obtained. The moments based descriptive statistics including the coefficients of variation, coefficient of skewness, coefficient of kurtosis, and index of dispersion have been studied. Method of moments and the method of maximum likelihood estimation have been discussed for estimating parameters of the quasi Poisson-Garima distribution. For applications and testing the goodness of fit of the quasi Poisson-Garima distribution some examples of count data from various fields have been presented. The quasi Poisson-Garima distribution provides much closer fit over other two-parameter discrete distributions. Hence the quasi Poisson-Garima distribution can be considered as one of the important discrete distribution.

Keywords: Poisson-Garima distribution, Quasi Garima distribution, Compounding

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