

## A QUASI POISSON-SUJATHA DISTRIBUTION WITH APPLICATIONS

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### SUMMARY

In this paper a Poisson mixture of a two-parameter quasi Sujatha distribution (QSD) introduced by Shanker (2016c), of which Poisson-Sujatha distribution (PSD) of Shanker (2016b) is a special case, has been proposed and investigated. The moments based measures including the coefficients of variation, skewness, kurtosis, and index of dispersion have been discussed. Both the method of moments and the method of maximum likelihood estimation have been discussed for estimating the parameters. Finally, three examples of real count datasets have been presented to test the goodness of fit of the proposed distribution and the fit has been found quite satisfactory over Poisson-distribution, Poisson-Lindley distribution and Poisson-Sujatha distribution.

*Keywords and phrases:* Poisson-Sujatha distribution, Quasi Sujatha distribution, Compounding, Moments, Estimation of parameters, Goodness of fit.

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