## Normal distribution with plasticizing component

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In this paper we introduce a new flexible plasticizing component and mixture of two distributions, further called the normal distribution with the plasticizing component. Some properties of the introduced distributions are derived, such are the cumulative distribution and the probability density function, moments, skewness and kurtosis. The unknown parameters are estimated by the maximum likelihood method. Illustrative examples of applicability and flexibility of the introduced distributions are given. We compare the flexibility of the introduced distribution and various distributions using skewness and kurtosis. asdad

## Literatura

[1] A. Azzalini (1985), A class of distributions which includes the normal ones, Scandinavian Journal of Statistics, 171–178

[2] A. Behboodian (1970), On the Modes of a Mixture of Two Normal Distributions, Technometrics 12(1), 131–139

[3] H. Bolfarine, G, Martínez-Flórez, H.S. Salinas (2018), *Bimodal symmetric-asymmetric power-normal families*, Communications in Statistics-Theory and Methods 47(2), 259–276

[4] P. Sulewski (2019), *Two-Piece Power Normal Distribution*, Communications in Statistics-Theory and Methods DOI:10.1080/03610926.2019.1674871

[5] I. Yadegari, A. Gerami, M.J. Khaledi (2008), A generalization of the Balakrishnan skew-normal distribution, Statistics and Probability Letters 78, 1165–1167.