

## On a Fractional Beta-Exponential Distribution

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### Abstract

A four parameter distribution representing the ratio of two independent Beta-Exponential variates is defined. An expression for the probability density function and the cumulative density function is given. The resulting distribution has the Quotient of Beta-Weibull distribution and the Pareto distribution as special cases. Its statistical properties were investigated and the method of Maximum Likelihood Estimation (MLE) has been proposed for estimating the parameters of the model. Based on the behavior of its hazard function, the model is appropriate in modeling the occurrence of infant mortality failures.

### Keywords

Beta-Exponential, Beta-Weibull, Pareto, Variates, Distributions

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