

## Some Aspects of Multivariate Generalized Gamma Random Variables

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The generalized gamma distribution is introduced by Stacy (1962). This distribution is very useful to describe lifetime data when conducting survival analysis and reliability. In fact, it includes the widely used exponential, Weibull, and gamma distributions as special cases. Inspired by Cherian's (1941) work, where joint distribution of sums of gamma random variables is the multivariate gamma distribution, we derive the properties of sums of generalized gamma random variables. Then via extending the transformation proposed by Bologna (1987), we present that a multivariate gamma distribution can be obtained from a multivariate normal distribution. Since the generalized gamma copula depicts the dependence structure in the multivariate generalized gamma distribution, its properties such as Kendall's and coefficients of tail dependence are discussed.

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