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Factorial moment estimation for the bivariate generalized Waring distribution

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In the context of accident theory, the bivariate generalized Waring distribution (Xekalaki,1984) is known to offer the possibility of obtaining distinguishable estimates of the "contribution" of chance, risk exposure and proneness to an accident situation. In this paper an estimation procedure based on the first and second order factorial moments is discussed for fitting the distribution to data. Expressions for the asymptotic standard errors of the estimators of the distribution parameters as well as of the resulting estimators of the variance components that represent the roles of the above mentioned factors are given.

Keywords and phrases: Generalized Waring distribution; factorial moment method of estimation; asymptotic standard errors; variance components.