

ABSTRACT

MOMENT, CUMULANT, AND CHARACTERISTIC FUNCTION OF GENERALIZED LOGISTIC DISTRIBUTION TYPE IV

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The generalized logistic distribution type IV is a generalized from standard logistic distribution that has two shape parameter, α and β . Standard logistic distribution is obtained from general logistic distribution therefore $\mu = 0$ dan $s = 1$. In this study discuss about charactristic of generalized logistic distribution type IV especially moment, cumulant, and characteristic function. Mean and varians are actually another special things which is called moment. Moment μ_r' are obtained by derivating moment generating function as many as r times. Although cumulant K_r is obtained by derivating cumulant generating function as many as r times. Therefore cumulant generating function is obtained by using logarithm natural on moment generating function. Moreover cumulant can be used to find skewness and kurtosis from generalized logistic distribution type IV. Characteristic function is one of transformation type that often be used on probability theory. Characteristic function is obtain from expectation value of e^{itX} therefore i is imaginary unit and $t \in R$. Then from characteristic function that has been obtained is proof that absolute value from characteristic function is equal 1. It is show that generalized logistic distribution type IV has monotonic function. Finally, the probability density function, skewness, and kurtosis were simulated by matlab to know whether it is increasing monotonic or decreasing monotonic.

Keywords : *Generalized Logistic Distribution Type IV, Moment, Cumulant, Characteristic Function*