ABSTRACT

**MOMENT, CUMULANT AND CHARACTERISTIC FUNCTION
OF GENERALIZED WEIBULL DISTRIBUTION**

By

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Generalized Weibull distribution is an expansion of Weibull distribution that has three parameters, α as a location parameter, β as a scale parameter and δ as a shape parameter. If α = 0 then the generalized Weibull distribution become the Weibull distribution. In this research, will discuss about moment, cumulant and characteristic function of generalized Weibull distrbution. Moment of generalized Weibull distribution is obtained by using moment generating function and by definition, moments of generalized Weibull distribution is obtained by derivative of moment generating function against t and evaluated on t = 0 and proved by definition that will be use to obtain the cumulants of generalized Weibull distribution. The second cumulant until r-th cumulant of generalized Weibull distribution equal with cumulants of Weibull distribution. Characteristic function and moment generating function of generalized Weibull distribution is obtained by decomposing e^{itx} and e^{tx} function into expansion the MacLaurin and use gamma and binomial function to obtain a general form of moment generating function and characteristic function of generalized Weibull distribution. In simulation study, skewness of generalized Weibull distribution is skew to the right and kurtosis of generalized Weibull distribution is platikurtic.

Keywords *: Generalized Weibull Distribution, Moment, Cumulant, Characteristic Function*