# Bayesian parameter and reliability estimate of Weibull failure time distribution

## ABSTRACT

Bayes and frequentist estimators are obtained for the two-parameter Weibull failure time distribution with uncensored observations as well as the survival/reliability and hazard function. The Weibull distribution is used extensively in life testing and reliability/ survival analysis. The Bayes approach is obtained using Lindleys approximation technique with standard non-informative (vague) prior and a proposed generalisation of the noninformative prior. A simulation study is carried out to compare the performances of the methods. It is observed from the study that the unknown parameters, the reliability and hazard functions are best estimated by Bayes using linear exponential loss with the proposed prior followed by general entropy loss function.

**Keyword:** General entropy and squared error loss functions; Generalised non-informative prior; Lindley approximation; Linear exponential; Maximum likelihood