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Stress-strength reliability of Weibull distribution based on progressively censored samples



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Abstract

Based on progressively Type-II censored samples, this paper deals with inference for the stress-strength reliability $R = P(Y < X)$ when X and Y are two independent Weibull distributions with different scale parameters, but having the same shape parameter. The maximum likelihood estimator, and the approximate maximum likelihood estimator of R are obtained. Different confidence intervals are presented. The Bayes estimator of R and the corresponding credible interval using the Gibbs sampling technique are also proposed. Further, we consider the estimation of R when the same shape... [\[+\]](#)

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for weibull distribution based on hybrid censored samples. J Syst Assur Eng Manag Int. <https://doi.org/10.1007/s13198-015-0390-2>. Article Google Scholar. Asgharzadeh A, Valiollahi R, Raqab MZ (2011) Stress-strength reliability of weibull distribution based on progressively censored samples. SORT 35:103–124. MathSciNet MATH Google Scholar. Estimation based on progressively type-I hybrid censored data from the Burr XII distribution. Statistical Papers, 1-43. Belaghi, R. A., Asl, M. N., & Singh, S. (2017). On estimating the parameters of the Burr XII model under progressive type-I interval censoring. Journal of Statistical Computation and Simulation, 87(16), 3132-3151, 2017. Acceptance sampling plans for inverse Weibull distribution based on truncated life test. International Journal of Reliability, Quality and Safety Engineering, <https://doi.org/10.1142/S0218539318500122>. Unal, Y., Bekci, M. (2017). Statistical estimation for the parameters of generalized inverted exponential distribution based on progressively type-I interval censored sample with part time operator. Based on hybrid censored samples, this paper deals with the inference on $R = P(X > Y)$, when X

and Y are two independent Weibull distributions with different scale parameters, but having the same shape parameter. The maximum likelihood estimator (MLE), and the asymptotic distribution, the conditional stress-strength reliability of Weibull distribution based on progressively censored samples. SORT, 35, 103-124. [3] Asgharzadeh, A., Valiollahi R, Raqab MZ (2011). Estimation of the stress-strength reliability for the generalized logistic distribution. Statistical Methodology, 15, 73-94. We obtain the maximum likelihood estimators of the parameters and a simulation study is conducted to validate the maximum likelihood estimators. The model is fitted to a real data set. Exponential and Weibull distributions are more popular than Gamma and log-Normal because the survival function of Gamma and log-Normal distributions doesn't have a closed form. Mixture distributions have been used widely in reliability and survival analysis studies recently. The comparison is carried out based on the values of Kolmogorov-Smirnov statistic, p-value, log-likelihood value, Akaike information criterion (AIC) and Bayesian information criterion (BIC). The Kolmogorov-Smirnov test is defined by

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