Abstract

Exponentiated power Lindley distribution is proposed as a generalization of some widely well-known distributions such as Lindley, power Lindley, and generalized Lindley distributions. In this paper, the exact explicit expressions for moments of order statistics from the exponentiated power Lindley distribution are derived. By using these relations, the best linear unbiased estimates of the location and scale parameters, based on type-II right censored sample, are obtained. Next, the mean, variance, and coefficients of skewness and kurtosis of some certain linear functions of order statistics are calculated and then used to derive the approximate confidence interval for the location and scale parameters using the Edgeworth approximation. Finally, some numerical illustrations and two real data applications are presented.