EXPONENTIATED ODD LINDLEY-G FAMILY OF DISTRIBUTIONS WITH APPLICATIONS TO LIFETIME DATA

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SUMMARY

A new class of distributions called the exponentiated odd Lindley-G (EOL-G) distribution is proposed. Three special cases of EOL-G distribution are studied, including exponentiated odd Lindley uniform (EOL-U), exponentiated odd Lindley log-Logistic (EOL-LLo) and exponentiated odd Lindley-Weibull (EOL-W). The structural properties of this distribution, including the quantile function, hazard function, series expansion of the probability density function, moments, conditional moments, mean deviations, and order statistics, are presented. Simulation studies are conducted. Parameters of the model are estimated by using the maximum likelihood estimation technique. Finally real datasets are used to illustrate the usefulness and applicability of the new distribution.

Keywords and phrases: Exponentiated Odd Lindley-G distribution; Exponentiated odd Lindley log-Logistic; Exponentiated odd Lindley-Weibull; Exponentiated odd Lindley Uniform; Maximum likelihood estimation.

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