The quantile-based generalized logistic distribution

Brenda V. Omacher*
Department of Statistics, University of Pretoria, Pretoria, South Africa – Brenda.Omachar@up.ac.za

Paul J. van Staden
Department of Statistics, University of Pretoria, Pretoria, South Africa – paul.vanstaden@up.ac.za

This paper proposes a new quantile-based generalized logistic distribution. This four-parameter distribution is highly flexible with respect to distributional shape in that it explains extensive levels of skewness and kurtosis through the inclusion of two shape parameters. The distribution is characterized through its $L$-moments and an estimation algorithm is presented for estimating the distribution’s parameters with method of $L$-moments estimation.

Keywords: $L$-moments; quantile function.