*Brazilian Journal of Probability and Statistics*
2015, Vol. 29, No. 1, 172–173
DOI: 10.1214/14-BJPS260
Main article DOI: 10.1214/12-BJPS209


# Corrigendum

## The beta log-logistic distribution

*Brazilian Journal of Probability and Statistics* **28** (2014), 313–332

**Artur J. Lemonte**
*Universidade Federal de Pernambuco*

By using the generator approach of Eugene et al. (2002), I have proposed in Lemonte (2014) a continuous distribution named as the "beta log-logistic distribution." The probability density function is given by

$$f(x) = \frac{(\beta/\alpha)}{B(a,b)} \frac{(x/\alpha)^{a\beta-1}}{[1+(x/\alpha)^{\beta}]^{a+b}}, \qquad x > 0, \tag{1}$$

where $a$, $b$, $\alpha$ and $\beta$ are positive parameters. I would like to point out that the density function (1) coincides with a density function which has been known in the statistics literature. In fact, from Feller (1971, p. 49) we can obtain the density (1); see, for example, Arnold (2014, Eq. (10)) with $\mu = 0$. Arnold (2014) calls (1) as the Feller–Pareto distribution, and others call it as the generalized $F$ distribution; see, for example, Pham-Gia and Duong (1989) and Cox (2008). In the literature, (1) might be called the generalized beta distribution of the second kind (i.e., the GB2 distribution); see, for example, McDonald (1984). The generalized $F$ and generalized beta of the second kind distributions are briefly discussed in Johnson et al. (1995, Chapter 27, Section 8.1). When $b = 1$ in (1), we obtain what I call "exponentiated log-logistic" distribution, which coincides with the Dagum distribution, whereas $a = 1$ we obtain what I call "Lehmann type II log-logistic" distribution, which coincides with the Pareto type IV/Burr type XII distribution.

## References

Arnold, B. C. (2014). Univariate and multivariate Pareto models. *Journal of Statistical Distributions and Applications* **1**, 1–16.

Cox, C. (2008). The generalized $F$ distribution: An umbrella for parametric survival analysis. *Statistics in Medicine* **27**, 4301–4312. MR2526546

Eugene, N., Lee, C. and Famoye, F. (2002). Beta-normal distribution and its applications. *Communications in Statistics—Theory and Methods* **31**, 497–512. MR1902307

Feller, W. (1971). *An Introduction to Probability Theory and Its Applications, Volume 2*, 2nd ed. New York: Wiley.

Received September 2014; accepted September 2014.