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Corrigendum

The beta log-logistic distribution

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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, α and β 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.

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