

CORRECTION

Correction: A Novel Generalized Normal Distribution for Human Longevity and other Negatively Skewed Data

Henry T. Robertson, David B. Allison

In [Table 1](#), the “Formula” column for “CDF” is incorrect. Please see the corrected [Table 1](#) here.

Table 1. Properties of the distribution.

Quantity	Formula
Parameters	$0 < \sigma < \mu < \lambda$
Domain	$x \in (0, \lambda)$
PDF	$f(x) = \frac{(1 - \mu/\lambda)}{\Phi(\frac{\mu}{\sigma})\sqrt{2\pi}\sigma(1 - x/\lambda)^2} \exp\left\{-\frac{(x - \mu)^2}{2\sigma^2(1 - x/\lambda)^2}\right\}$
CDF	$F(x) = 1 - \frac{1 - \Phi\left(\frac{x - \mu}{\sigma(1 - x/\lambda)}\right)}{\Phi\left(\frac{\mu}{\sigma}\right)}$
Hazard	$\frac{(1 - \mu/\lambda)}{\sigma(1 - x/\lambda)^2} \cdot \frac{\phi\left[\frac{x - \mu}{\sigma(1 - x/\lambda)}\right]}{1 - \Phi\left[\frac{x - \mu}{\sigma(1 - x/\lambda)}\right]}$
Quantile	$\lambda \cdot \frac{\mu - \sigma\Phi^{-1}\left[\Phi\left(\frac{\mu}{\sigma}\right)(1 - p)\right]}{\lambda - \sigma\Phi^{-1}\left[\Phi\left(\frac{\mu}{\sigma}\right)(1 - p)\right]}$
Median	$\frac{\mu - \sigma\Phi^{-1}\left[\frac{1}{2}\Phi\left(\frac{\mu}{\sigma}\right)\right]}{1 - \frac{\sigma}{\lambda}\Phi^{-1}\left[\frac{1}{2}\Phi\left(\frac{\mu}{\sigma}\right)\right]} \approx \mu$
Mode	$\lambda \left\{ 1 + \frac{(\mu - \lambda)(-\lambda + \sqrt{\lambda^2 + 8\sigma^2})}{4\sigma^2} \right\}$
Mean	$\int_0^\lambda \frac{x(1 - \mu/\lambda)}{\Phi(\frac{\mu}{\sigma})\sqrt{2\pi}\sigma(1 - x/\lambda)^2} \exp\left\{-\frac{(x - \mu)^2}{2\sigma^2(1 - x/\lambda)^2}\right\} dx$
Variance	$\int_0^\lambda \frac{(x - E(X))^2(1 - \mu/\lambda)}{\Phi(\frac{\mu}{\sigma})\sqrt{2\pi}\sigma(1 - x/\lambda)^2} \exp\left\{-\frac{(x - \mu)^2}{2\sigma^2(1 - x/\lambda)^2}\right\} dx$

doi:10.1371/journal.pone.0151123.t001



OPEN ACCESS

Citation: Robertson HT, Allison DB (2016) Correction: A Novel Generalized Normal Distribution for Human Longevity and other Negatively Skewed Data. PLoS ONE 11(3): e0151123. doi:10.1371/journal.pone.0151123

Published: March 3, 2016

Copyright: © 2016 Robertson, Allison. This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Reference

1. Robertson HT, Allison DB (2012) A Novel Generalized Normal Distribution for Human Longevity and other Negatively Skewed Data. PLoS ONE 7(5): e37025. doi: [10.1371/journal.pone.0037025](https://doi.org/10.1371/journal.pone.0037025) PMID: [22623974](https://pubmed.ncbi.nlm.nih.gov/22623974/)