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A Skewed Truncated Pearson Type VII Distribution

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Abstract: Skewed symmetric distributions have attracted a great deal of attention in the last few years. One of them, the *skewed Pearson type VII distribution* suffers from limited applicability because it is well known that the Pearson type VII distribution does not have finite moments of all orders. This note proposes an alternative referred to as *skewed truncated Pearson type VII distribution* and defined by the pdf $f(x) = 2g(x)G(\lambda x)$, where $g(\cdot)$ and $G(\cdot)$ are taken, respectively, to be the pdf and the cdf of a truncated Pearson type VII distribution. This distribution possesses finite moments of all orders and could therefore be a better model for certain practical situations. Two such situations are discussed. The note also derives various properties of the distribution, including its moments.

Key words: Gauss hypergeometric function, skewed truncated Pearson type VII distribution, truncated Pearson type VII distribution

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