On Some Sampling Distributions for Skew-Normal

Population and its Applications

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Abstract

Recently, there are intense investigations about generalizing normal distributions. Among them, the skew-normal distribution retains many statistical properties of the normal distribution. In this talk, first some basic properties of the skew-normal distribution and its related research are reviewed. Next, we study properties of sampling distributions for skew-normal population, including explicit forms of the probability density function and cumulative density function of the sample mean, and the joint moment generating function of sample mean and sample variance, etc. Finally, we illustrate the distribution of skew-normal sample mean with an application to a new control chart to monitor the process mean for skewed data.