

# Some Improved Variance Estimators From Bivariate Non-normal Population Using Paired Observations

by

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**Abstract-Typed full paper under preparation:** Given a pair of observations,  $\{x_i, y_i; i = 1, 2, \dots, n\}$  on two variables  $X$  and  $Y$  for a random sample  $s$ , from some bivariate non-normal population like bivariate gamma, Beta-stacy which are of much use in modelling data obtained in physical, Social and life-sciences. This paper considers an improvement of the customary estimator of population variance. A mixture (i.e., a weighted combination) of the customary estimator of the variance and a suitably chosen statistic  $t$  is proposed. It is also indicated that under some conditions for a broad range of the values of the mixing constants, the improvement in the sense of having a smaller mean square error, over the traditional estimator is possible.