

**BASIC STATISTICS STARTS WITH BIVARIATE FOR ACADEMIC DEGREE  
PROGRAM**

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In official statistics, bivariate statistics is used to start long-term statistical education such as covariance matrix. We propose that variance and covariance be taught simultaneously. Iterative proportional fitting (raking) is another form of statistics from two different sources or two different periods. Statistics can be introduced by using at minimum two sources of data or bivariate. Ever since computer time be affordable (inexpensive processing cost), statistics can be introduced in dimensionality reduction instead of merely generalization from univariate. Example is to start with structural equation modelling (SEM) concept then proceed with multiple regression. Example is to start with trivariate projection pursuit then apply principal component analysis (PCA). The views here are that of author and co-authors and not necessarily reflect official views.