

Generating Multivariate Normal Distribution Data

To become familiar with various multivariate statistical tests, one needs to have data to analyze. With this procedure you can generate one or more distributions of variable values from defined populations. As the user, you specify the population correlations among the variables as well as the means and standard deviations of the variables. The procedure then generates a sample of values from the specified population for whatever sample size you request. Shown below is the specification form for this procedure and the results placed in the data grid. Be sure you have closed all files before using this procedure. You may save the generated file and then use it to demonstrate various statistical analysis procedures in your LazStats package.

Multivariate Generator

Directions: You may generate sample multivariate data from a multivariate population with known intercorrelation among the variables and with known population means and standard deviations. Enter the number of variables and the size of sample to generate. Then enter the intercorrelations among the variables row-wise (the program will fill in the lower triangular values. Next, enter the population means and standard deviations. When ready to generate the data, press the Generate button. The data will be placed in the data grid which you can save under a new file name.

Number of variables: Sample Size: ☒ Print Parameters ☒ Print Sample Stats.

Variable	VAR1	VAR2	VAR3
VAR1	1	0.8	-0.3
VAR2	0.8	1	0.5
VAR3	-0.3	0.5	1
Mean	50	20	100
Std.Dev.	15	10	15

Figure 1 The Multivariate Data Generation Dialog

Determinant of the population matrix = -1113750.0000

Rho Matrix with 50 cases.

Variables

	VAR1	VAR2	VAR3
VAR1	1.000	0.800	-0.300
VAR2	0.800	1.000	0.500
VAR3	-0.300	0.500	1.000

Population Means with 50 valid cases.

Variables	VAR1	VAR2	VAR3
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50.000	20.000	100.000
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Sigmas with 50 valid cases.

Variables	VAR1	VAR2	VAR3
	15.000	10.000	15.000

Sample r Matrix with 50 cases.

Variables			
	VAR1	VAR2	VAR3
VAR1	1.000	0.604	-0.338
VAR2	0.604	1.000	0.125
VAR3	-0.338	0.125	1.000

Sample Means with 50 valid cases.

Variables	VAR1	VAR2	VAR3
	50.748	20.388	100.979

Standard Deviations with 50 valid cases.

Variables	VAR1	VAR2	VAR3
	16.039	12.797	15.780