

... BIHISTOGRAM**PURPOSE**

Generates a bihistogram.

DESCRIPTION

The bihistogram is a graphical data analysis technique for summarizing and comparing the distributions of 2 data sets. It is a graphical alternative for the various classical 2-sample tests (e.g., t for location, F for dispersion). Frequencies (or relative frequencies) are plotted on the vertical axis while the response variable is plotted on the horizontal axis.

There are 2 types of bihistograms:

1. bihistogram (absolute frequencies are plotted);
2. relative bihistogram (relative frequencies are plotted).

The (relative) bihistogram is a plot consisting of 2 (relative) histograms. The (relative) histogram for data set 1 is positioned above the zero-line while the (relative) histogram for data set 2 is positioned below the zero-line. The advantage of the bihistogram is 2-fold:

1. the sample sizes do not need to be identical;
2. many distributional aspects may be simultaneously tested--shifts in location, shifts in dispersion, changes in symmetry/skewness, outliers, etc.

SYNTAX 1

BIHISTOGRAM <y1> <y2> <SUBSET/EXCEPT/FOR qualification>

where <y1> is the first response variable;

<y2> is the second response variable;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

SYNTAX 2

RELATIVE BIHISTOGRAM <y1> <y2> <SUBSET/EXCEPT/FOR qualification>

where <y1> is the first response variable;

<y2> is the second response variable;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES

BIHISTOGRAM Y1 Y2

RELATIVE BIHISTOGRAM Y1 Y2

BIHISTOGRAM Y1 Y2 SUBSET AUTO 4

BIHISTOGRAM Y1 Y2 SUBSET STATE < 25

NOTE 1

The bihistogram is automatically plotted with the bar switch ON. The CHARACTERS and LINES command settings are ignored. The appearance of the bars (e.g., solid filled or filled with a cross-hatch pattern) can be set with the various BAR attribute setting commands. See the example program for the HISTOGRAM command for some examples.

NOTE 2

As with a standard histogram, the class width and the upper and lower class limits can be controlled with the CLASS WIDTH, CLASS LOWER, and CLASS UPPER commands.

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

HISTOGRAM	=	Generates a histogram.
QUANTILE-QUANTILE PLOT	=	Generates a quantile-quantile plot.
BOX PLOT	=	Generates a box plot.
YOUDEN PLOT	=	Generates a Youden plot.

T-TEST	=	Carries out a 2 sample t test.
ANOVA	=	Carries out an ANOVA.
PLOT	=	Generates a data or function plot.
MULTILOT	=	Allows multiple plots per page.

APPLICATION

Exploratory Data Analysis

IMPLEMENTATION DATE

88/9

PROGRAM

```
SKIP 25
READ AUTO83B.DAT Y1 Y2
.
LEGEND 1 COMPARING 2 DISTRIBUTIONS
LEGEND 2 BIHISTOGRAM
.
DELETE Y2 SUBSET Y2 < 0
BIHISTOGRAM Y1 Y2
```

