Chapter 35
Scatter Plots

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Chapter 35
Scatter Plots

A *scatter plot* is a graphic representation of the relationship between two variables.

You can identify and label observations in the scatter plot, control the orientation of the plot, and control the information shown on the axes. You can explore multivariate data in a scatter plot matrix.

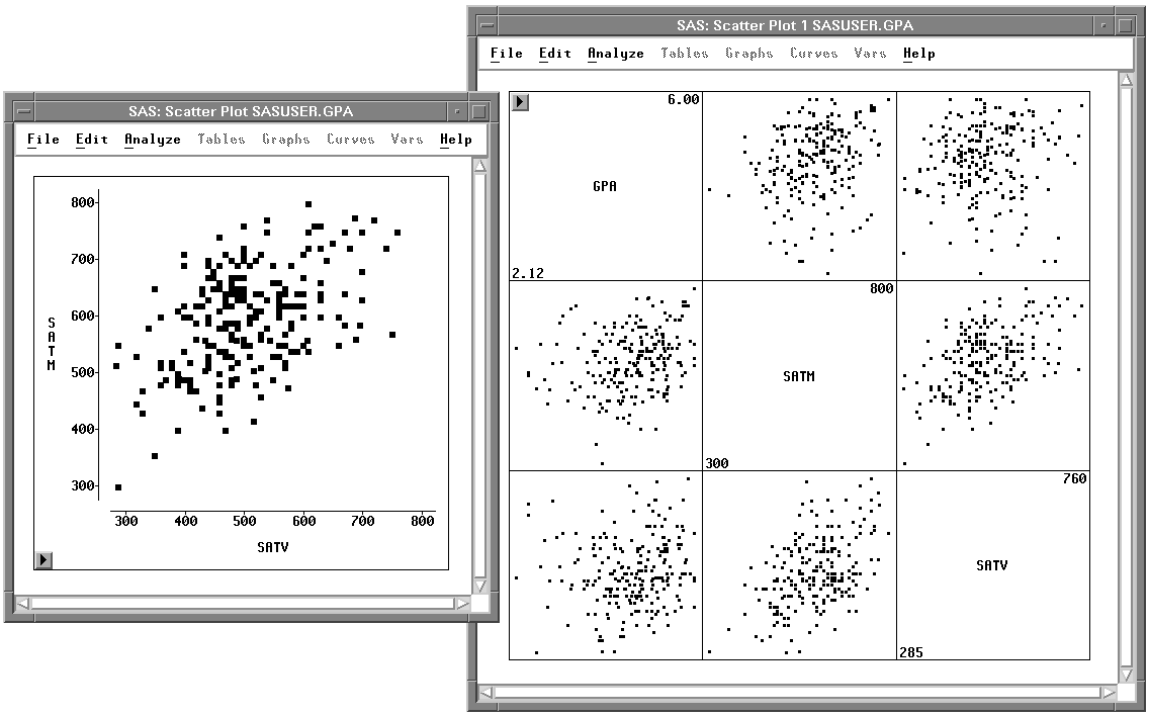

Figure 35.1. Scatter Plot and Scatter Plot Matrix

Variables

To create a scatter plot, choose **Analyze:Scatter Plot (Y X)**. If you have already selected two or more variables, you obtain a *scatter plot matrix*. A scatter plot matrix consists of all pairwise scatter plots of the selected variables. If you assign **Y** and **X** roles to the same set of variables, variable names and minimum and maximum values appear in the diagonal panels.

If you have not selected any variables, a variables dialog appears.

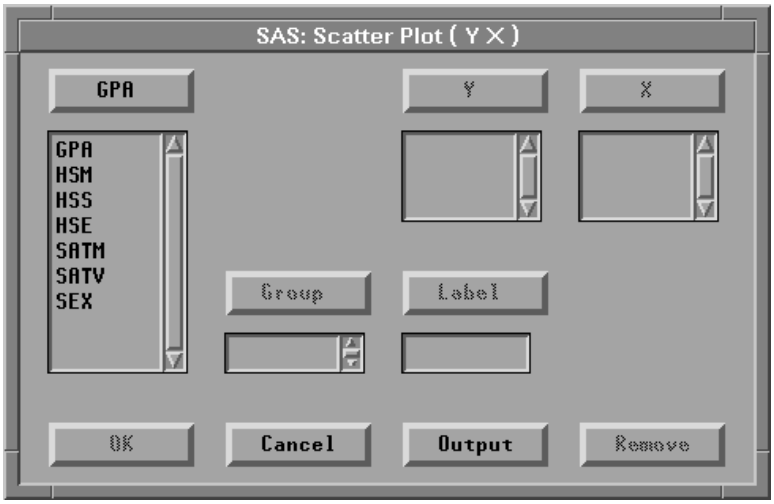

Figure 35.2. Scatter Plot Variables Dialog

In the dialog, select at least one **Y** variable and at least one **X** variable.

You can select one or more **Group** variables if you have grouped data. This creates scatter plots for each group.

You can select a **Label** variable to label observations in the plots.

Method

Observations with missing values for **Y** or **X** variables are not used.

Output

To view or modify output options associated with your scatter plot, click on the **Output** button of the variables dialog. This displays the options dialog shown in Figure 35.3.

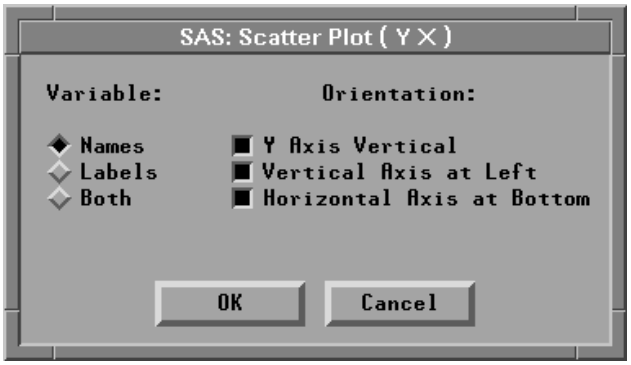

Figure 35.3. Scatter Plot Output Options Dialog

Variable:Names	labels the axes with variable names.
Variable:Labels	labels the axes with variable labels.
Variable:Both	labels the axes with both names and labels.
Orientation: Y Axis Vertical	draws the axis for the Y variable vertically. If this option is turned off, the Y axis is horizontal.
Orientation: Vertical Axis at Left	places the vertical axis at the left side of the plot. If this option is turned off, the vertical axis is at the right side of the plot.
Orientation: Horizontal Axis at Bottom	places the horizontal axis at the bottom of the plot. If this option is turned off, the horizontal axis is at the top of the plot.

You can modify other aspects of a scatter plot or scatter plot matrix using the pop-up menu. For scatter plots, the pop-up menu has the following choices.

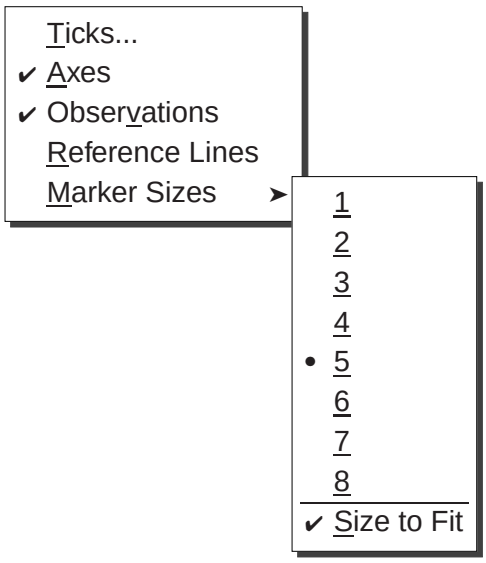

Figure 35.4. Scatter Plot Pop-up Menu

Ticks... specifies tick labels on either axis.

Axes toggles the display of axes.

Observations toggles the display of observations. When this menu is toggled off, observations are displayed only if selected.

Reference Lines toggles the display of lines that indicate the position of major ticks on the axes. This option is not available unless the axes are visible.

Marker Sizes sets the size of markers used to display observations.

When **Marker Sizes:Size to Fit** is checked, marker sizes are chosen to fit the graph.

You can manipulate square scatter plot matrices as a unit. For example, you can resize the entire matrix by dragging a corner. Pop-up menus act on all plots in the matrix.

If you have created a brush, an additional pop-up menu is available, as shown in Figure 35.5. (See Chapter 5, "Exploring Data in Two Dimensions," for more information on brushing.)

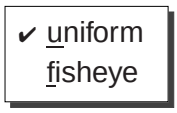

Figure 35.5. Scatter Plot Lens Pop-up Menu

uniform specifies that observations beneath the brush are seen as if the brush were a typical camera lens. The relative positions of brushed observations are not distorted by the presence of the brush.

fisheye specifies that observations beneath the brush are seen as if the brush were a fisheye camera lens. The relative positions of brushed observations are transformed so that observations near the center of the brush are magnified, whereas observations away from the center appear small. The fisheye lens may be useful for discerning individual observations within densely clustered data.

⊕ **Related Reading:** Scatter Plots, Chapter 5.

⊕ **Related Reading:** Fitting Curves, Chapter 13.

⊕ **Related Reading:** Confidence Ellipses, Chapter 18.

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