

Seven Steps to SAS/GRAPH Savvy

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Abstract

Adding color graphics to your reporting repertoire can maximize the impact of your data analysis. This tutorial provides the basics for effectively making the move to SAS/GRAPH. Take advantage of the SAS/GRAPH procedures by following the author's seven essential steps: 1) know your data, 2) know your intended results, 3) understand how to communicate effectively with graphics, 4) know your product - defaults and basics, 5) experiment with advanced features and options, 6) edit your graphics, and 7) test your results.

The author will solve basic problems using vertical and horizontal bar charts, pie charts, plots and maps. The techniques will address categorical and continuous data. The code examples start simply, add features, and demonstrate options. Take away an enhanced appreciation for information visualization.

The published abstract and introduction provide the philosophy and basics. A color handout of the data, code, and graphics will be available for session attendees.

Know Your Data

Since SAS/GRAPH is just another component of the SAS system, it can be fully integrated into your SAS solution for analyzing data. It is an extension of the familiar tools for examining the structure of your data and summarizing values. Understanding your data will ensure that the toolkit is optimally used to show the data precisely but display conclusions clearly.

Know Your intended Results

You should know the point you're trying to make before you start coding and know that your data will support the graphic. Write a description of what the graph should show and compare your results with your statement.

Understand Communicating with Graphics

Graphics output enhances a table of list of figures, visually emphasizes a concept, simplifies a complex problem, or makes a dramatic point. Further study on the subject of communicating with graphics is advised. Graphics users should understand the impact of different colors, patterns, positioning, 3D effects or object size will have on your audience. Each technique has its place in helping to convey your message.

Know Your Product: Defaults and Basics

SAS/GRAPH is an obvious choice as it is just another set of PROCs in the already extensive base library. Utilities and mechanisms for storage and replay of images are also provided. It's a "picture production system" that gives you much control over the appearance of the pictures. Understanding the defaults for each type of picture gives the user a jumping off point, though you don't want the defaults to drive the way you write your graphics code.

The author will illustrate the simplest invocation of the GPLOT, GCHART, and GMAP procedures as well as the default settings for system and device options.

Start Simple, then Enhance

The examples will then build on the defaults to enhance the color, height, font, and position of text; the color and style of lines, bars, and map areas. A data-driven ANNOTATE data set will be created to annotate a picture, putting text and other enhancements on a picture that are not generated by the procedure. You want to keep in mind that the display features should enhance, not overwhelm, the message.

Edit Your Graphics

After reviewing the output of your graphics, analyze the impact of the pictures. Decide what adjustments could be made to better reflect the story you're trying to tell. Remove anything from the graph that detracts from the message. Make sure you're not forcing too much information onto the picture; limit yourself to the dimensions intended by the procedure. Determine if you chose the appropriate chart type for the display of your data.

Test Your Results

Take your edited results to your team or client to gage the impact and get feedback on the display. Determine if the picture could be enhanced or if the point is being made dramatically enough. The conclusion to be drawn from the picture should be obvious within a few seconds of examining the graph.

The Presentation

The presentation will generate test data, illustrate the use of procedures to create horizontal and vertical bar charts, pie charts, two and three dimensional plots, and various types of maps, demonstrate syntax and control of the text and overall appearance of the image.

The author will define problems, provide BASE SAS solutions, then SAS/GRAPH solutions, emphasizing the

pros and cons of each approach. Enhancements will be provided for each case, using features and annotation to achieve the desired results