

# Dashing out a Quick Dashboard of Graphs in SAS®

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## Introduction

Today's explosion of data within any organization can easily overwhelm its leader's capability to understand what it means. Whether the goal is profits or knowledge, understanding the meaning behind your data is critical to any organization's future. SAS procedures have long been used to summarize data using sophisticated graphical and statistical techniques. This poster describes how to combine multiple statistical tests and graphs in a matrix/dashboard format on a single, concise page to create a quick dashboard of information that can summarize important information, including inferential comparisons. SAS users familiar with basic SAS programming techniques will be able to produce these dashboards of graphic results.

## Macros Used to Create the Dashboard

The macros needed for the example are in a file named DASH\_MACRO.SAS and include the following SAS macros:

**%CHIRESULTS** – performs a chi square test on a 2x2 table, and creates a bar chart.

**%TTESTRESULTS** – performs an independent group t-test and create comparative histograms or boxplots.

**%MAKEDASH**– creates a template needed to display the graphical results.

## Step 1 – Prepare the Work Area

```
* SPECIFY THE LOCATION OF THE INCLUDE FILES;
%LET FOLDER=C:\SASDATA\;
* INCLUDE ROUTINES REQUIRED FOR THE DASHBOARD PROGRAM;
%INCLUDE "&FOLDER.DASH_MACROS.SAS";
```

```
ODS GRAPHICS OFF;
TITLE;FOOTNOTE;
```

```
* DELETE ANY PLOTS THAT MIGHT BE IN WORK.GSEG;
PROC GREPLAY NOFS IGOUT=WORK.GSEG;
  DELETE _ALL_;
RUN;
QUIT;
```

## Step 2 – Create a Series of Graphs

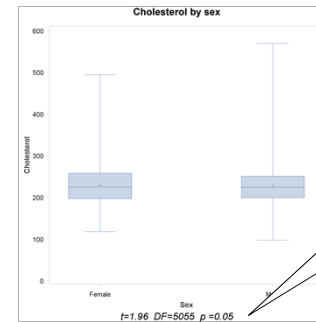
This example uses two macros to create graphs with footnotes that report statistical results:

```
%CHIRESULTS(ROWVAR=Chol_Status, COLVAR=SEX,
BDATA=SASHELP.HEART, PLTNAME=PLOT3);
```

```
%TTESTRESULTS(OBSVAR=Cholesterol, GPVAR=sex, BDATA=sashelp.
heart, PLTNAME=plot2, TYPE=B);
```

## %TTESTRESULTS Macro

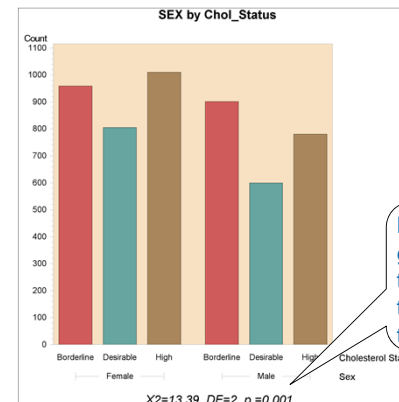
- **OBSVAR** A numeric variable containing the observed data for comparison.
- **GPVAR** A numeric or text variable that contains two categories specifying the two groups for a t-test comparison.
- **BDATA** The SAS data set that contains the data for the analysis.
- **TYPE** Either H for horizontal comparative histograms, V for vertical comparative histograms, or B for Box and Whiskers comparison.
- **PLTNAME** A name you provide for the graphical output. Typically this will be PLOT1, PLOT2, and so on.



Note that the graph includes the results of the statistical test.

## %CHIRESULTS Macro

- **ROWVAR** A numeric or text variable containing the variable name for the ROW variable in a chi-square analysis.
- **COLVAR** A numeric or text variable containing the variable name for the COLUMN variable in a chi-square analysis. Important: for this program the COLVAR should have only 2 categories.
- **BDATA** The SAS data set that contains the data for the analysis.
- **PLTNAME** A name you provide for the graphical output. This should be PLOT1, PLOT2, and so on up to the number of plots you intend to place in the display.



Note that the graph includes the results of the statistical test.

### Step 3 – Combine into a Dashboard

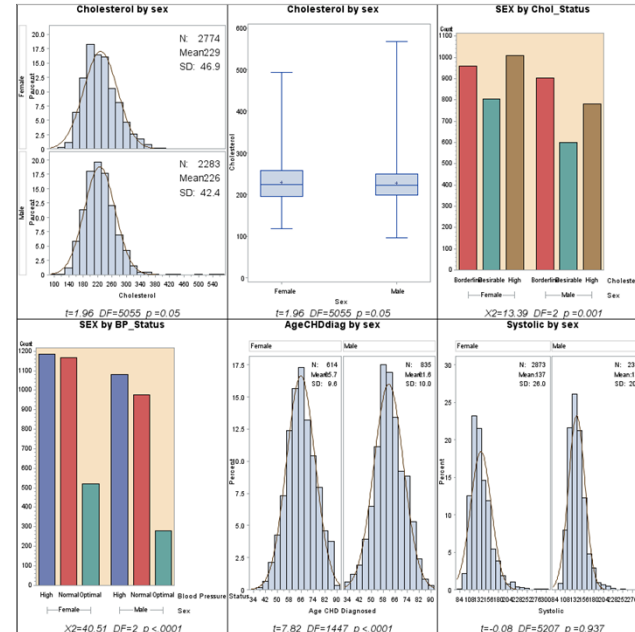
Make all of the graphs needed and save them by name (in GSEG):

```
%TTESTRESULTS(OBSVAR=Cholesterol, GPVAR=sex, bdata=sashelp.heart, pltname=plot1, type=V);
%TTESTRESULTS(OBSVAR=Cholesterol, GPVAR=sex, bdata=sashelp.heart, pltname=plot2, type=B);
%CHIREULTS(ROWVAR=Chol_Status, COLVAR=SEX, BDATA=SASHHELPHEART, PLTNAME=PLOT3);
%CHIREULTS(ROWVAR=BP_Status, COLVAR=SEX, BDATA=SASHHELPHEART, PLTNAME=PLOT4);
%TTESTRESULTS(OBSVAR=AgeCHDdiag, GPVAR=sex, bdata=sashelp.heart, pltname=plot5, type=H);
%TTESTRESULTS(OBSVAR=Systolic, GPVAR=sex, bdata=sashelp.heart, pltname=plot6, type=H);
```

Combine saved graphs onto a single-page dashboard using this call:

```
%MAKEDASH()
```

### Resulting Dashboard



4 ft. x 2 ft. poster

**SIDE POSTER**



#### Reference

SAS / Samples & SAS Notes, "Sample 24940: Dynamically replay all GSEG entries," <http://support.sas.com/kb/24/940.html>.

#### Code is on-line

[www.alanelliott.com/DASHBOARD](http://www.alanelliott.com/DASHBOARD)



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