

SAS Common Statistical Procs

And PROC basics

Common Procs

- Some statistical procs
 - proc freq
 - proc means
 - proc corr
 - proc t-test
 - proc reg

- And a utility proc
 - proc sort

Documentation

- Most statistical procs are found in “SAS/STAT,” but a few of the most basic are found in “Base SAS”
- Typical documentation
 - Overview: FREQ Procedure
 - Getting Started: FREQ Procedure
 - Syntax: FREQ Procedure
 - Details: FREQ Procedure
 - Examples: FREQ Procedure
 - References

Proc freq syntax

- PROC FREQ <options> ;
 - BY variables ;
 - EXACT statistic-options </ computation-options> ;
 - OUTPUT <**OUT**=SAS-data-set> options ;
 - TABLES requests </ options> ;
 - TEST options ;
 - WEIGHT variable </ option> ;

Reading Syntax Diagrams

- Most statements are optional
- Notes on required statements and statement order usually at the bottom
- Words in ALL CAPS are SAS keywords
- Words in lower case are things you specify
- Words in <angle brackets> are optional

proc freq

- Univariate counts and percents
- Crosstabs and n-way tables

- Typical use

```
proc freq data=y.mendotaice;  
  tables opened century;  
run;
```

Minimal specification

- Default options
- Default output

```
proc freq; run;
```

- Data set: `_LAST_`
- Variables: `_ALL_`

More specifications

- One-way tables
- Two-way tables (crosstabs)
- Suppress default output
- Request additional statistics

Using weighted data

```
data coffee2;
    input loc $ type $ count @@;
datalines;
drive-up cappuccino 2 window cappuccino 4
drive-up espresso 6 window espresso 2
drive-up iced 2 window iced 2
drive-up kona 2 window kona 9
;

proc freq;
    tables type*loc / chisq;
    weight count;
run;
```

Requesting output as data

```
proc freq;  
  tables loc * type / out=coffeetable;  
  weight count;  
run;
```

proc means

```
proc means;
```

```
run;
```

- Similar to proc summary and proc univariate
- Var lists
- Class and by statements
- Statistics specifications
- weights
- output

proc corr

```
proc corr;  
  var x y z;  
run;
```

- Missing data
- with option
- ODS graphics

proc reg

```
proc reg;  
  model y = x z;  
run;
```

- Interactive procedure
- Model specification algebra
 - Variables must already be calculated in the data
 - Variables must be numeric
 - No class statement (create your own indicator sets)