

Summary of Lesson 5: Analyzing and Reporting on Data

Enhancing Reports with Titles, Footnotes, and Labels

- TITLE is a global statement that establishes a permanent title for all reports created in your SAS session.
- You can have up to 10 titles, in which case you would just use a number 1-10 after the keyword TITLE to indicate the line number. TITLE and TITLE1 are equivalent.
- Titles can be replaced with an additional TITLE statement with the same number. TITLE; clears all titles.
- You can also add footnotes to any report with the FOOTNOTE statement. The same rules for titles apply for footnotes.
- Labels can be used to provide more descriptive column headers. A label can include any text up to 256 characters.
- All procedures automatically display labels with the exception of PROC PRINT. You must add the LABEL option in the PROC PRINT statement.

```
TITLE <n> "title-text";
```

```
FOOTNOTE <n> "footnote-text";
```

```
LABEL col-name="label-text";
```

- To create a grouped report, first use PROC SORT to arrange the data by the grouping variable, and then use the BY statement in the reporting procedure.

```
PROC procedure-name;
  BY col-name;
RUN;
```

Creating Frequency Reports

- PROC FREQ creates a frequency table for each variable in the input table by default. You can limit the variables analyzed by using the TABLES statement.

```
PROC FREQ DATA=input-table;
  TABLES col-name(s) </ options>;
RUN;
```

- PROC FREQ statement options:

```
ORDER=FREQ|FORMATTED|DATA
NLEVELS
```

- TABLES statement options:

```
NOCUM
NOPERCENT
PLOT=FREQPLOT (must turn on ODS graphics)
OUT=output-table
```

- One or more TABLES statements can be used to define frequency tables and options.
- ODS graphics enable graph options to be used in the TABLES statement.
- WHERE, FORMAT, and LABEL statements can be used in PROC FREQ to customize the report.
- When you place an asterisk between two columns in the TABLES statement, PROC FREQ produces a two-way frequency or crosstabulation report.

```
PROC FREQ DATA=input-table;
  TABLES col-name*col-name </ options>;
RUN;
```

Creating Summary Statistics Reports

- Options in the PROC MEANS statement control the statistics included in the report.
- The CLASS statement specifies variables to group the data before calculating statistics.

- The WAYS statement specifies the number of ways to make unique combinations of class variables.

```
PROC MEANS DATA=input-table <stat-list> <options>;  
  VAR col-name(s);  
  CLASS col-name(s);  
  WAYS n;  
RUN;
```

- The OUTPUT statement creates an output SAS table with summary statistics. Options in the OUTPUT statement determine the contents of the table.

```
PROC MEANS DATA=input-table <stat-list> <options>;  
  VAR col-name(s);  
  CLASS col-name(s);  
  WAYS n;  
  OUTPUT OUT=output-table <statistic(col-name)=col-name> </option(s)>;  
RUN;
```