Macro-mizing Your Time: Using SPSS to Automate a Report Generation Process

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Association for Institutional Research
45th Annual Conference – San Diego, CA
June 1, 2005

Introduction

- Small IR shops can have large reporting burdens
- The complexity and expectations of reports are increasing
- Manual-production of reports represents a significant time drain
- SPSS is a powerful statistical package that is available to IR offices

Goals

- Introduce users to lesser-known but powerful SPSS processes
- Demonstrate how SPSS can automate the report generation process
- Highlight how SPSS can save time

Outline

- Introduce hypothetical reporting situation
- Review following SPSS processes in light of example:
  - Graphic User Interface (GUI)
  - Command Syntax
  - Macros
  - Scripts
  - TableLooks
- Provide SPSS resources for personal development
- Questions/Discussion

Hypothetical Reporting Situation

- Upcoming campus-wide meeting
- Meeting will focus on results from a student feedback form
- The reports are needed ASAP
- Different preferences on report formats

Graphic User Interface (GUI)

- "Point-and-click" environment
- Front-end interface that automatically generates command syntax
- Most GUI processes can be "pasted" to the syntax editor

Command Syntax

- Powerful command language provided by SPSS
- Runs “behinds the scenes”
- Rendered in the third major SPSS window – the Syntax Editor

KEY
Red = SPSS commands
Green = Variables from data file
Purple = Values vary depending upon department (eventually replaced by Macro keyword arguments)

*Part I: “Get file" retrieves SPSS data file.

```
GET FILE = 'C:\AIR_SPSS_Demo_05.sav'.
```

*Part II: Flagging of survey respondents for inclusion in appropriate report column: department, college, university.

```
if (dep_code eq 1) depart = 1.
if (col_code eq 1 and dep_code ne 1) college = 1.
if (dep_code ne 1) univers  = 1.
```

*Part III: Setting labels for variables in order to have column headings defined correctly.

```
VARIABLE LABEL depart 'English'/ college 'Arts & Humanities'/univers 'University'.
```

*Part IV: Ctables command syntax puts all the report pieces together (see syntax manual for details).

```
CTABLES
/ table (Q1 + Q2 + Q3 + Q4 + Q5 + Q6 + Q7 + Q8) [count colpct]  by (depart + college + univers)
/ categories variables = Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Total = yes
/ Title Title = '2004 Departmental Questionnaire Frequency Distributions: English Department (Senior Class)'.
```

Macros

- Allows users to create a basic syntax skeleton which is populated with specified user-created fields (similar to mail merge)
- Constructed with command syntax and executed in the syntax window
- Macros run until all “Macro Calls” have been exhausted—one needed for each department

KEY
Red = SPSS non-macro commands
Blue = Macro commands
Green = Macro Keyword Arguments & Call

*Three Parts to a Macro: Definition, Body, **Keyword Arguments & Call** .

```
DEFINE !Freq1 (M_depart_name=!TOKENS (1)
               /M_college_name  = !Tokens (1)
               / M_depart_code = !Tokens (1)
               / M_college_code = !Tokens (1)
               / M_depart_name2 =!CMDEND).

GET  FILE='C:\AIR_SPSS_Demo_05.sav'.

if (dep_code eq !M_depart_code) depart = 1.
if (col_code eq !M_college_code and dep_code ne !M_depart_code) college = 1.
if (dep_code ne !M_depart_code) univers  = 1.

VARIABLE LABEL depart !M_depart_name/ college !M_college_name/univers 'University'.

CTABLES
/ table (Q1 + Q2 + Q3 + Q4 + Q5 + Q6 + Q7 + Q8) [count colpct]  by (depart + college + univers)
/categories variables = Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Total = yes
/Title Title = '2004 Departmental Questionnaire Frequency Distributions (Seniors Only):'  !M_depart_name2.

!ENDDEFINE.
```

***Macro Call**—To feed the macro, start with the macro name (“!Freq1”) and then specify values for each keyword argument:

```
!Freq1 M_depart_name = 'English ' M_college_name = 'Arts & Humanities' M_depart_code = 1 M_college_code = 1
       M_depart_name2 = 'English Dept.'.
```

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Scripts

- SPSS scripts program tasks that cannot be done with command syntax, including:
  - Bold lines in a report
  - Print reports
  - Save output
- Scripts use Sax Basic programming language
- Scripts are created and modified in the fourth major SPSS window, the script window

TableLook Files

- Most SPSS output tables use TableLooks
- Users may modify/create TableLooks to control:
  - Color
  - Font Size
  - Font Type
  - Alignment
  - Margins
  - Footnotes
  - Borders
  - Etc.
- TableLooks can be referenced from syntax

Summary

- IR offices are increasingly asked to find ways to "work smarter"
- SPSS can standardize most reporting demands
- SPSS alleviates drudgery and tedious manual report production
- Resources are available to learn these processes

References

- Levesque, R. (2003). *SPSS Programming and Data Management. A Guide for SPSS and SAS Users.* Chicago, IL: SPSS Inc.
- www.spsstools.net
- Programming with SPSS Scripts – An SPSS Training Manual
- SPSS User Manuals & Command Syntax Reference

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