

Introduction
to SPSS
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Michele
Claibourn,
StatLab

UVa Library
Research Data
Services

Introduction

Working with
SPSS

Learning More

Intro to SPSS

Michele Claibourn, StatLab

September 4/5, 2013

Research Data Services in the Library

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Learning More

- Research Data Services:
www.library.virginia.edu/services/
 - Data management planning
 - GIS training and consultations
 - Locating data, sharing and archiving data
- StatLab Services: statlab.library.virginia.edu
 - Individual consulting: advice, training, feedback on quantitative research
 - Workshops on statistical methods and techniques
- Upcoming Events

Getting to Know SPSS

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SPSS: What you see

- The Data Editor, Data view: rows are observations, columns are variables
- The Data Editor, Variable view: rows are variables, columns are variable attributes
- The Output Editor: Displays results, records commands in a session
- The Syntax Editor: List of commands/code you wish SPSS to execute

Ordering SPSS around

- The GUI
- The syntax editor
- The hybrid approach – GUI and paste
- Python or Basic

Wait...

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Why should I type commands?

- 1 Scientific research requires reproducible research findings. A record of commands makes the research reproducible (for your future self as well)
- 2 Easier to perform alternate analyses (in the end, it's more efficient)
- 3 Facilitates collaboration through clear communication with co-authors
- 4 Not every procedure is available using point-and-click

Some rules of SPSS syntax

- Every command ends with a period.
- The asterisk (*) precedes comments. Even a comment is terminated by a period.
- SPSS syntax is not case sensitive.

Example Data

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The Chronicle of Higher Education College Completion (collegecompletion.chronicle.com/).¹ Includes data for 3,800 degree-granting institutions. Key variables:

- `chronname`: Institution name
- `level`: Level of institution (4-year, 2-year)
- `control`: Control of institution (Public, Private not-for-profit, Private for-profit)
- `grad_100_value`: Percentage of first-time, full-time, degree-seeking undergraduates who complete a degree or certificate program within 100 percent of expected time (bachelor's-seeking group at 4-year institutions)
- `grad_150_value`: Percentage of first-time, full-time, degree-seeking undergraduates who complete a degree or certificate program within 150 percent of expected time (bachelor's-seeking group at 4-year institutions)
- `student_count`: Total number of undergraduates in 2010
- `med_sat_value`: Median estimated SAT value for incoming students
- `aid_value`: The average amount of student aid going to undergraduate recipients
- `endow_value`: End-of-year endowment value per full-time equivalent student
- `pell_value`: Percentage of undergraduates receiving a Pell Grant

¹Supported by the Bill & Melinda Gates Foundation.

To the GUI

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- Reading data: `File-Open-Data` and `File-Read Text Data`
- Saving data: `File-Save As`
- Examining data: (not sure how to access the list command through the GUI)
- Subsetting with: `Data-Select Cases-If condition is satisfied-If-(Enter conditions)-Continue-OK/Paste Operators`

equal	= or EQ
not equal	~= or NE
and	& or AND
or	or OR
- Exploring data, means: `Analyze-Descriptive Statistics-Descriptives-(Select variables)-OK/Paste`
- Exploring data, frequencies: `Analyze-Descriptive Statistics-Frequencies-(Select variables)-OK/Paste`

To the GUI, 2

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Learning More

- Exploring data, cross-tabs: Analyze-Descriptive Statistics-Crosstabs-(Select variables)-(Cells-Columns/Rows)-OK/Paste
- Graphing data, hisotgram: Graphs-Legacy Dialogs-Histogram
- Graphing data, scatterplots: Graphs-Legacy Dialogs-Scatter/Dot-Simple Scatter-Define-(Select variables)-OK/Paste
- Graphing data, boxplots: Graphs-Legacy Dialogs-Boxplots
 - Simple-Summaries of separate variables: single variable boxplot
 - Simple-Summaries for groups of cases: single variable boxplot conditioning on categorical variable
 - Clustered-Summaries for groups of cases: single vaible boxplot conditioning on two categoical variables

To the GUI, 3

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Learning More

- Manipulating data, renaming variables: In Data Editor, Variable View, type a new name in Name field
- Manipulating data, recoding variables: Transform-Recode Into Different Variables-(Select input, name output, define old/new values)-OK/Paste
- Manipulating data, computing new variables: Transform-Compute Variable-(Name target, define expression)-OK/Paste
- Manipulationg data, labeling variables: In Data Editor, Variable View, type variable label in Label field
- Manipulating data, labeling values: In Data Editor, Variable View, click Values field and enter each value and label

To the syntax file!

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- Reading data: `GET FILE='drive:\path\filename.sav'` and `GET DATA`
- Saving data: `SAVE OUTFILE='drive:\path\filename.sav'`
- Examining data: `LIST varlist`
- Subsetting with `COMPUTE varname` and `FILTER BY varname` or `TEMPORARY` and `SELECT IF`
- Exploring data, means: `DESCRIPTIVES VARIABLES=varlist`
- Exploring data, frequencies: `FREQUENCIES VARIABLES=varlist`
- Exploring data, cross-tabs: `CROSSTABS /TABLES=varname1 BY varname2 /CELLS=`
- Graphing data, histogram: `GRAPH /HISTOGRAM=varname`
- Graphing data, scatterplots: `GRAPHS /SCATTERPLOT=xvarname WITH yvarname`

To the syntax file, 2

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- Graphing data, boxplots: `EXAMINE VARIABLEBES=varname1 BY varname2 /PLOT=BOXPLOT`
- Manipulating data, renaming variables: `RENAME VARIABLES (oldname=newname)`
- Manipulating data, recoding variables: `RECODE varlist (rules) INTO newvarlist`
- Manipulating data, computing new variables: `COMPUTE newvar=rule` or `IF (rule) newvar=value`
- Manipulating data, labeling variables: `VARIABLE LABELS varname 'Label'`
- Manipulating data, labeling values: `VALUE LABELS varlist value 'label'`

Getting Help

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- SPSS listserv with searchable archive
(<http://listserv.uga.edu/archives/spssx-1.html>)
- UCLA IDRE Resources
(<http://www.ats.ucla.edu/stat/spss/>)
- Many books/guides