Intro to SPSS: A Software for Advanced Statistical Analysis

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In collaboration with the SPSS Training Club

Keywords

- Quantitative Research
- Variables
- Cases
- Codebook
- Independent variable (IV)
- Dependent variable (DV)
- Categorical
- Continuous (scale)

Keywords

- **Quantitative Research-** use of interpretive/ theoretical frameworks that inform the study of research problems addressing the meaning individuals or groups ascribe to a social/human problem (Creswell, 2013)
    - Variables that can be quantified (counted)
- **Independent variables** (IV)- manipulated (quasi- experiments)
- **Dependent variables** (DV)- outcome measure

Preparing Data

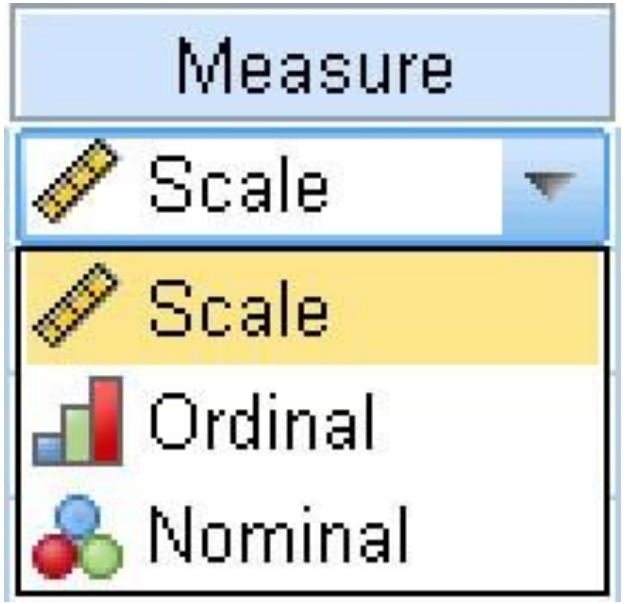
- Convert all information to numbers in Excel.
- Have codebook prepared.
- Know what your data is
  - Nominal, Ordinal, or Scale?
  - What does each question ask?
  - What are your value labels?

Classifying Measures

- Classify Measures
  - **Categorical**
    - **Nominal**- Variables that have no value, categorizes items
      - Gender, Ethnicity
    - **Ordinal**- Variables are put in a order or rank
      - Ex: socio economic status (“low income”,”middle income”,”high income”), education level (“high school”,”BS”,”MS”,”PhD”), income level (“less than 50K”, “50K-100K”, “over 100K”)
  - **Continuous**
    - **Scale-only** numerical value, have numeric responses
      - Ex: Weight, Height

Examples of Measures

- Age
- Exam Grade (A,B,C,D,F)
- Hair Color
- Type of Pet
- Military Rank



What is a Codebook?

It is a document where you as a researcher keep detailed information on all of your variables. Consider a codebook like a dictionary to your data set.

Keep in mind that the better organized you are, the easier your research will be!

Where to begin?

1. Identify & understand your independent and dependent variables.
   Know what type of data you will be collecting/measuring: scale, nominal, ordinal.
2. Review & understand your survey items.

3. Identify the variable names, variable labels, and value labels.

Codebook example - IV & DV

Variable name		Variable label	Value labels
IV 1	Bio Sex:	What was your biological sex at birth?	1= female, 2 = male
IV 2	Anxiety:	Survey questions/ activity/ test scores	1= low, 2= moderate, 3= severe
DV	Happiness:	Survey questions/activity/test scores	Continuous

Codebook example - Survey items

Sample Question:

1. How would you describe your Gender?
    - Female
    - Male
    - Nonbinary
    - Prefer not to Answer
    - Other

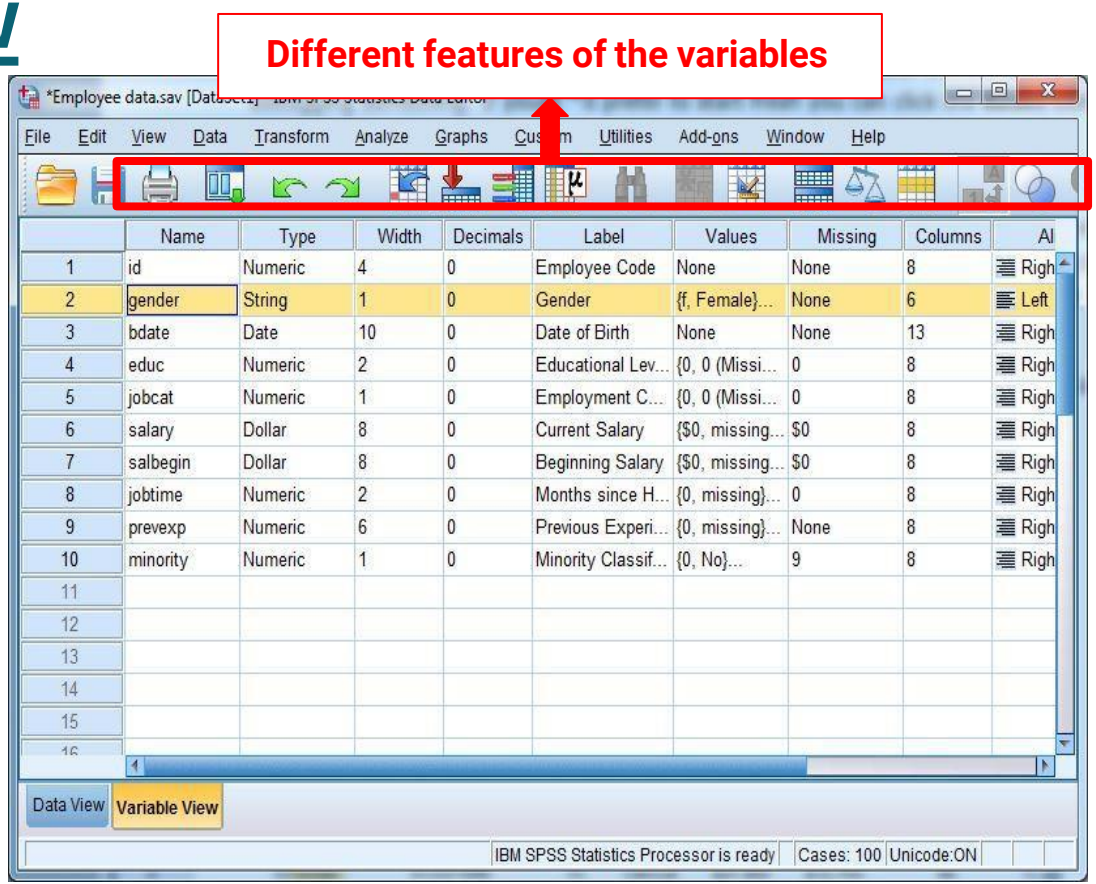
- How many groups/categories are shown?
- Identify the value labels.

Codebook Example - Answer

Variable name	Variable label	Value label
Gender	What is your gender?	1 = Female
		2 = Male
		3 = Nonbinary
		4 = Prefer not to Answer
		5 = Other

SPSS Variable View

- Rows are your Variables
- Each individual question
- Columns are the features of your variables
- What type of data?
- What name?



Name and Label

To identify each variable, there are two things required;

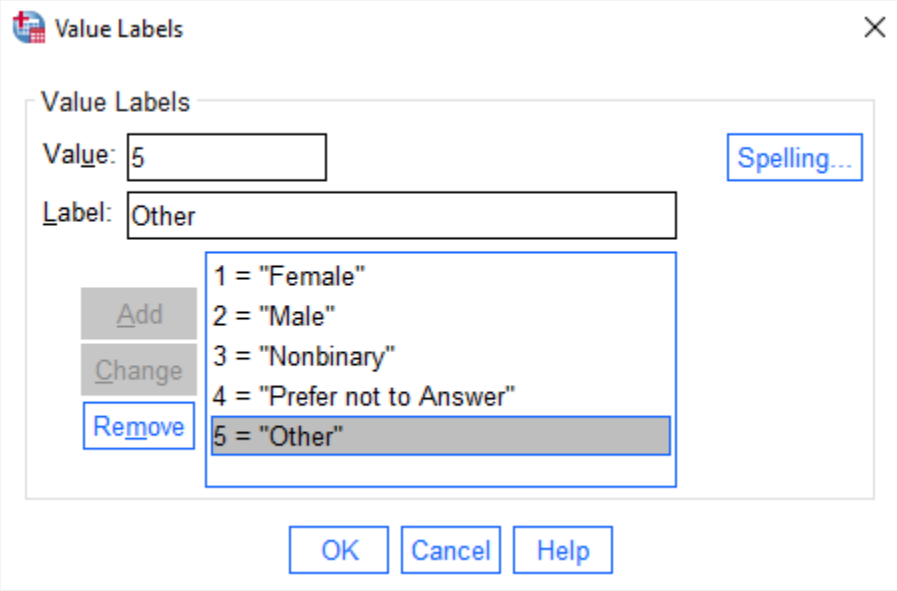
- **Name**: a short title of the variable (can be acronyms/one word/etc)
- **Label**: Describes the variable in depth (i.e full question from survey or what exactly the variable is measuring)

	Name	Type	Width	Decimals	Label
1	id	Numeric	4	0	Employee Code
2	gender	String	1	0	Gender
3	bdate	Date	10	0	Date of Birth
4	educ	Numeric	2	0	Educational Lev...
5	jobcat	Numeric	1	0	Employment C...
6	salary	Dollar	8	0	Current Salary
7	salbegin	Dollar	8	0	Beginning Salary
8	jobtime	Numeric	2	0	Months since H...
9	prevexp	Numeric	6	0	Previous Experi...
10	minority	Numeric	1	0	Minority Classif...

	Name	Type	Width	Decimals	Label
1	CD1	Numeric	2	0	I am able to adapt to change
2	CD2	Numeric	2	0	I have close and secure relationships
3	CD3	Numeric	2	0	Sometimes, fate or God can help
4	CD4	Numeric	2	0	I can deal with whatever comes my way
5	CD5	Numeric	2	0	Past success gives confidence for new challenge
6	CD6	Numeric	2	0	I am able to see the humorous side of things

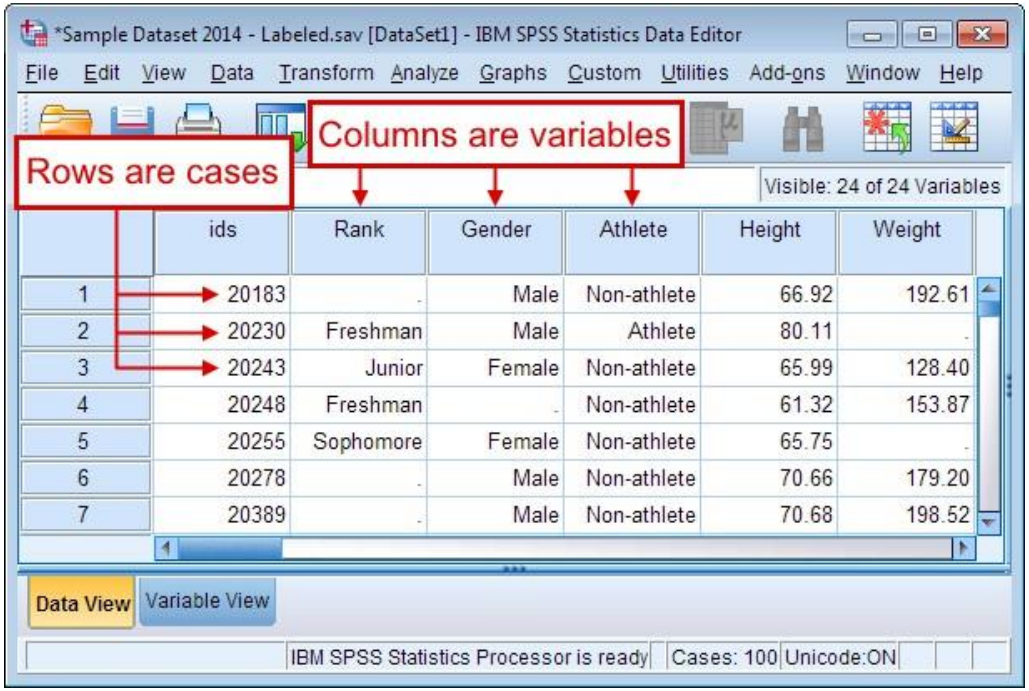
Labeling Variables in SPSS

- You may get your survey data back as words rather than numbers.
- So you may have to convert your data into a numerical value (in Excel) prior to inputting to SPSS.
- Then, in SPSS label those numbers using the codebook.



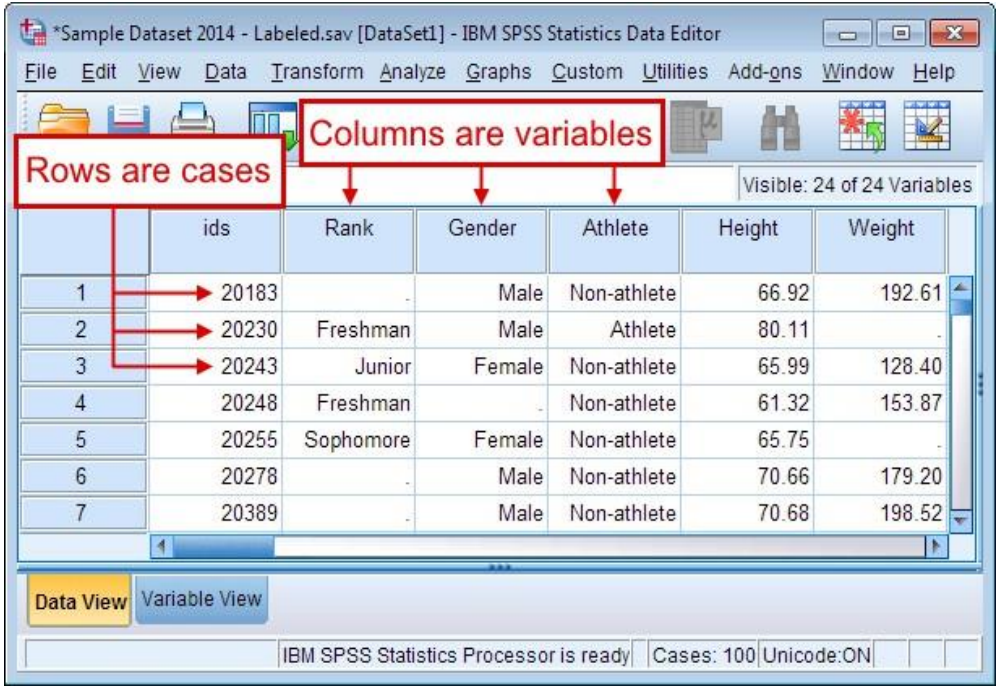
SPSS Data View

- ***Variables*** are attributes, characteristics, or measurements that describe cases. For example, your data might include information such as each college student's date of birth, gender, or class rank.
- Each column has information about a variable that describes each case (ex: college student).



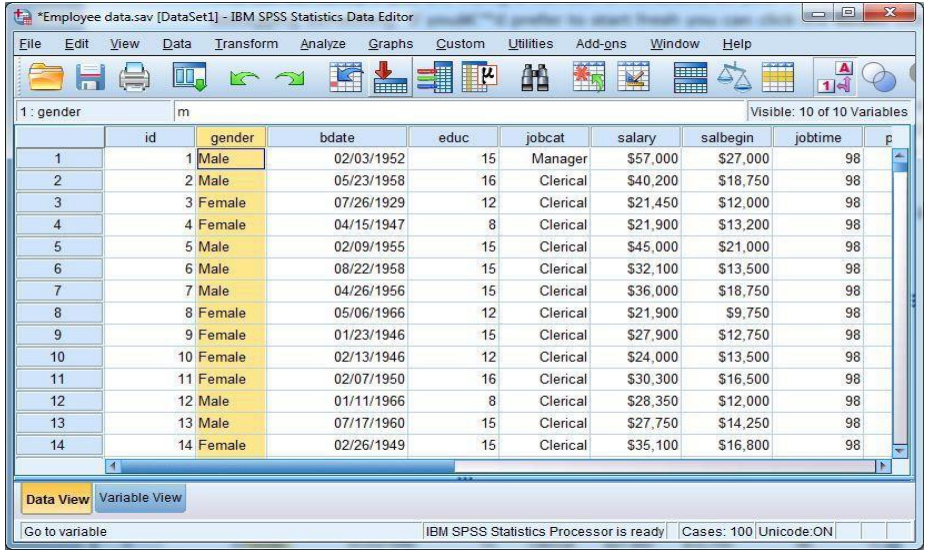
Data View

- ***Cases*** represent independent observations, experimental units, or subjects. For example, if the data are based on a survey of college students, then each row in the data would represent a specific college student who participated in the study.



Data View

- When the Data View icon on the bottom is yellow, you are now in Data View.
- This spreadsheet is your raw data.
- In data view, you input the data for each participant.
- Visible information in the Data view:
  - Total # of participants (cases)
  - Information for each participant
  - Scores, Age, Gender, etc…



	id	gender	bdate	educ	jobcat	salary	salbegin	jobtime	p
1	1	Male	02/03/1952	15	Manager	$57,000	$27,000	98	
2	2	Male	05/23/1958	16	Clerical	$40,200	$18,750	98	
3	3	Female	07/26/1929	12	Clerical	$21,450	$12,000	98	
4	4	Female	04/15/1947	8	Clerical	$21,900	$13,200	98	
5	5	Male	02/09/1955	15	Clerical	$45,000	$21,000	98	
6	6	Male	08/22/1958	15	Clerical	$32,100	$13,500	98	
7	7	Male	04/26/1956	15	Clerical	$36,000	$18,750	98	
8	8	Female	05/06/1966	12	Clerical	$21,900	$9,750	98	
9	9	Female	01/23/1946	15	Clerical	$27,900	$12,750	98	
10	10	Female	02/13/1946	12	Clerical	$24,000	$13,500	98	
11	11	Female	02/07/1950	16	Clerical	$30,300	$16,500	98	
12	12	Male	01/11/1966	8	Clerical	$28,350	$12,000	98	
13	13	Male	07/17/1960	15	Clerical	$27,750	$14,250	98	
14	14	Female	02/26/1949	15	Clerical	$35,100	$16,800	98	

Sample Frequency Table

Support groups Offered

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	41	43.6	45.6	45.6
	Yes	49	52.1	54.4	100.0
	Total	90	95.7	100.0	
Missing	System	4	4.3		
Total		94	100.0		

What is your age? (Ex: 26)

	N	%
18	4	4.3%
19	5	5.3%
20	9	9.6%
21	6	6.4%
22	6	6.4%
23	5	5.3%
24	4	4.3%
25	11	11.7%
26	4	4.3%
27	5	5.3%
28	3	3.2%
29	1	1.1%
30	3	3.2%
31	4	4.3%
32	6	6.4%
33	2	2.1%
34	3	3.2%
35	4	4.3%
37	1	1.1%
39	1	1.1%
40	7	7.4%

SPSS Student Leader & Community Experiences

SPSS Training Club Contact Information

We offer workshops, tutoring appointments, & in class presentations.

Email: spsstrainingclub@gmail.com
Torolink: SPSS Training Club
Instagram: spss_club

Topics we can help with:

- Data analysis
- Data importing & exporting
- Data entry & cleaning
- Scoring test
- Codebooks
- APA research papers