



INTRODUCTION TO SPSS PART#1

ITEC107 – Introduction to Computing
for Pharmacy



Outline

- Introduction
- Basics of SPSS
- Basic Structures of SPSS
- Missing Value
- Analyze Data
- Graphing Data

Objectives

- To be able to understand basics of SPSS
- To be able to start SPSS program
- To be able to apply basic statistics
- To be able to apply graphing on selected data

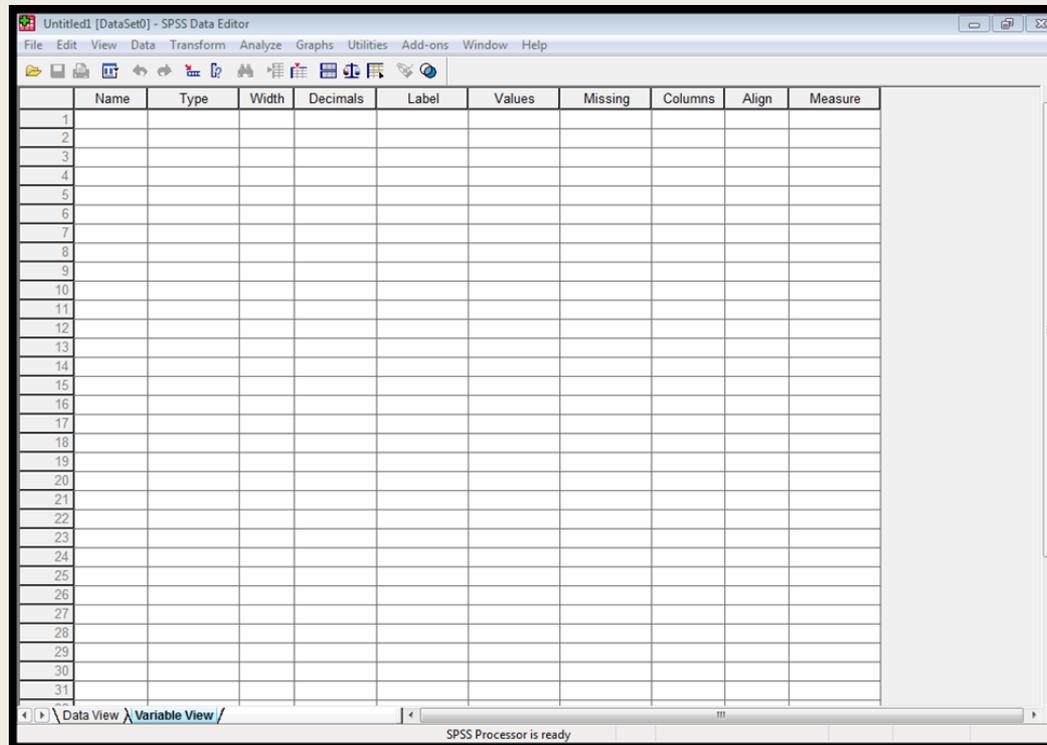
What is SPSS?

SPSS is a Windows based program that can be used to perform data entry and analysis and to create tables and graphs. SPSS is capable of handling large amounts of data and can perform all of the analyses covered in the text and much more

Introduction to SPSS

- **SPSS** is the acronym of Statistical Package for the Social Science. **SPSS** is one of the most popular statistical packages which can perform highly complex data manipulation and analysis with simple instructions.
- We will be work on SPSS 16.0.

SPSS Layout



SPSS Layout(cont.)

- SPSS opens directly into an untitled Data Editor.

SPSS Layout(cont.)

- The data in the Data Editor is saved in a file with the extension **.sav**
- Information from the Output Viewer is saved in a file with the extension **.spo**

How to open SPSS

- Go to START
- Click on PROGRAMS → spss folder
- Click on SPSS14



Opening a data file

- Click on FILE → OPEN → DATA
- Click COMPUTER → LOCAL DISK C:/
- Click PROGRAM FILES → SPSS Eval
- Click TUTORIAL → SAMPLE FILES
- Select CATALOG.SAV

Basic Structures of SPSS

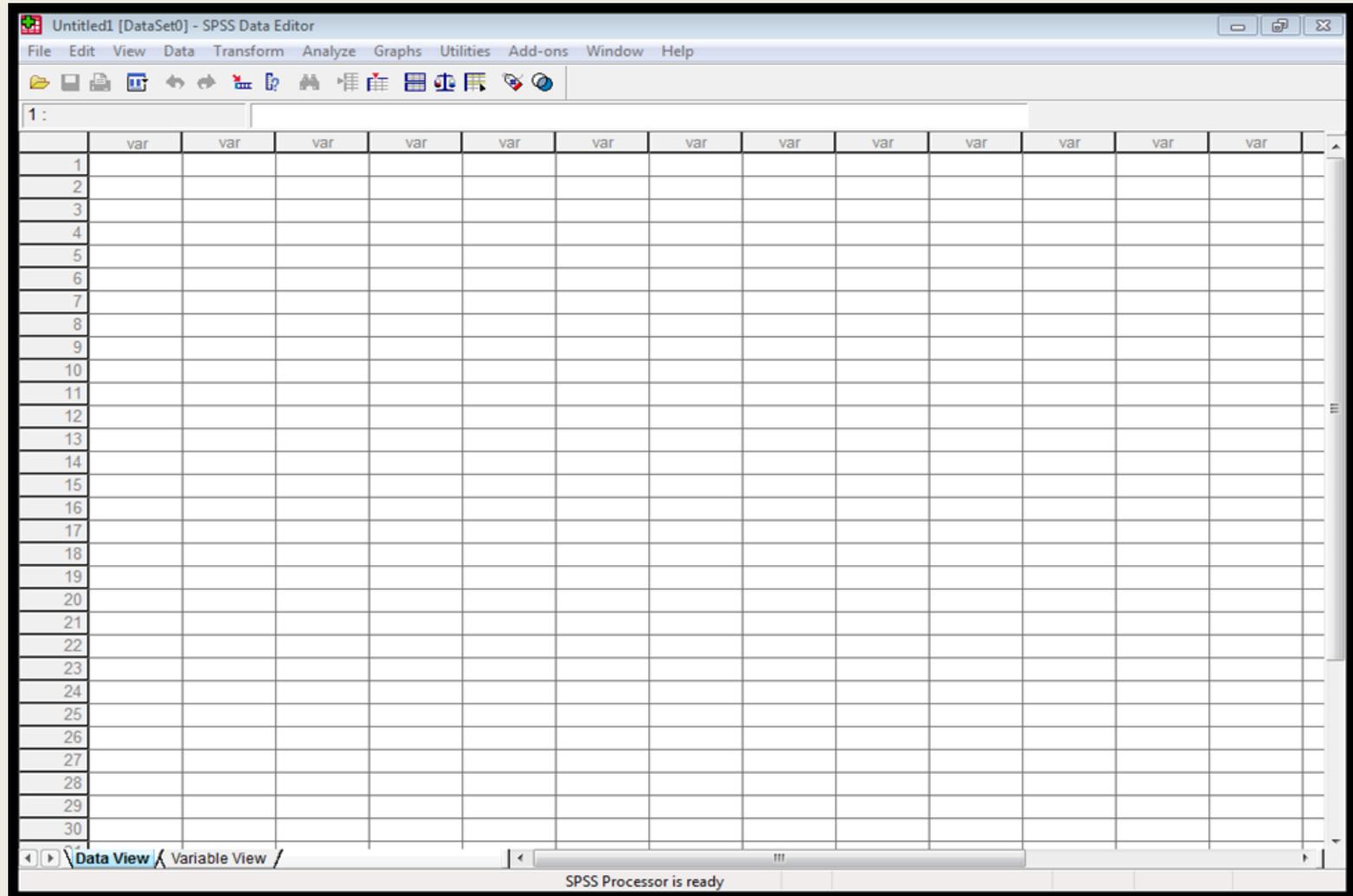
- There are two different windows in SPSS
- 1st – Data Editor Window - shows data in two forms
 - *Data view*
 - *Variable view*
- 2nd – Output viewer Window – shows results of data analysis
- *You must save the data editor window and output viewer window separately. Make sure to save both if you want to save your changes in data or analysis.*

Data view vs. Variable view

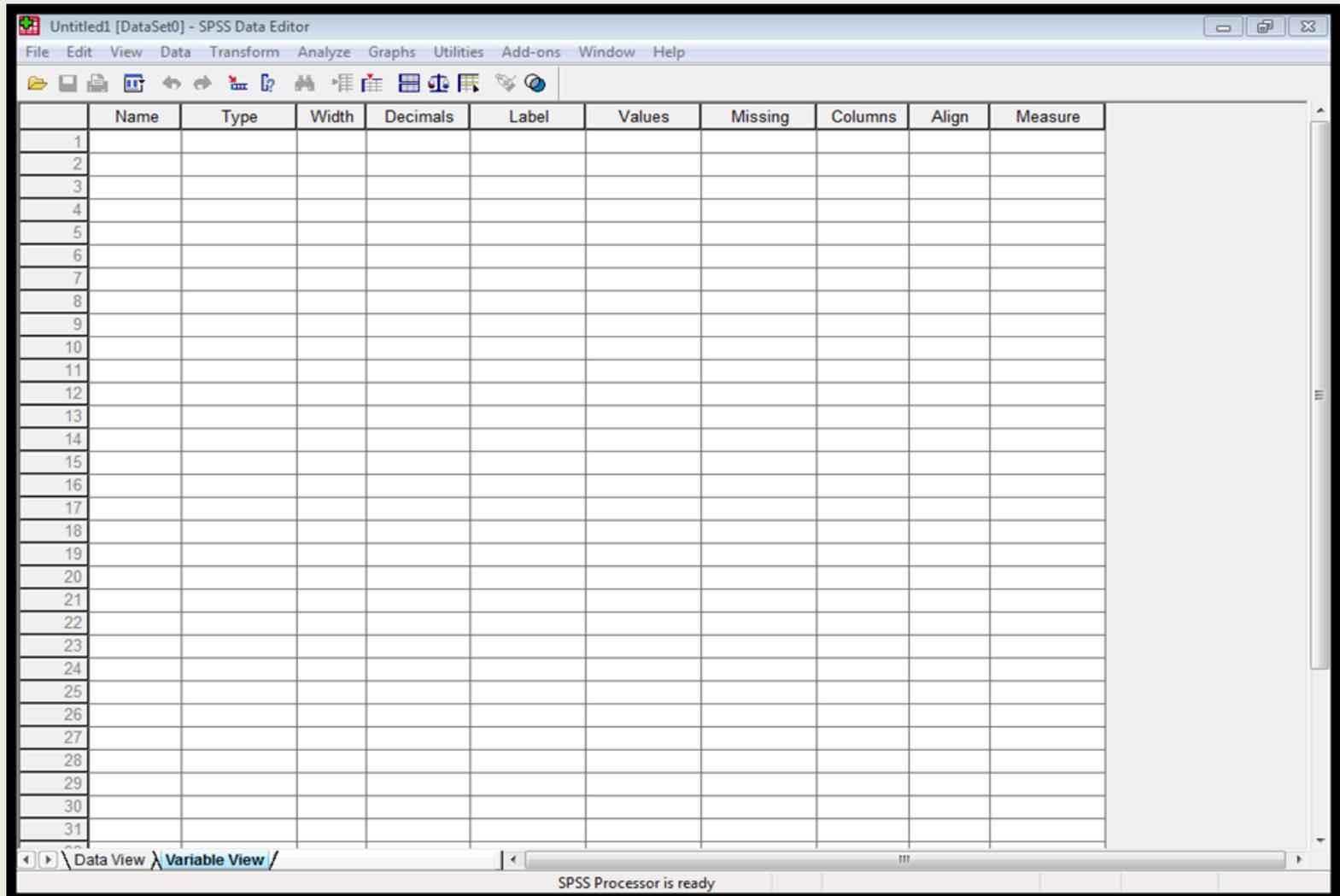
- Data view
 - *Rows are cases*
 - *Columns are variables*

- Variable view
 - *Rows define the variables*
 - Name, Type, Width, Decimals, Label, Missing, etc.
 - *Scale – age, weight, income*
 - *Nominal – categories that cannot be ranked (ID number)*
 - *Ordinal – categories that can be ranked (level of satisfaction)*

Data view



Variable view

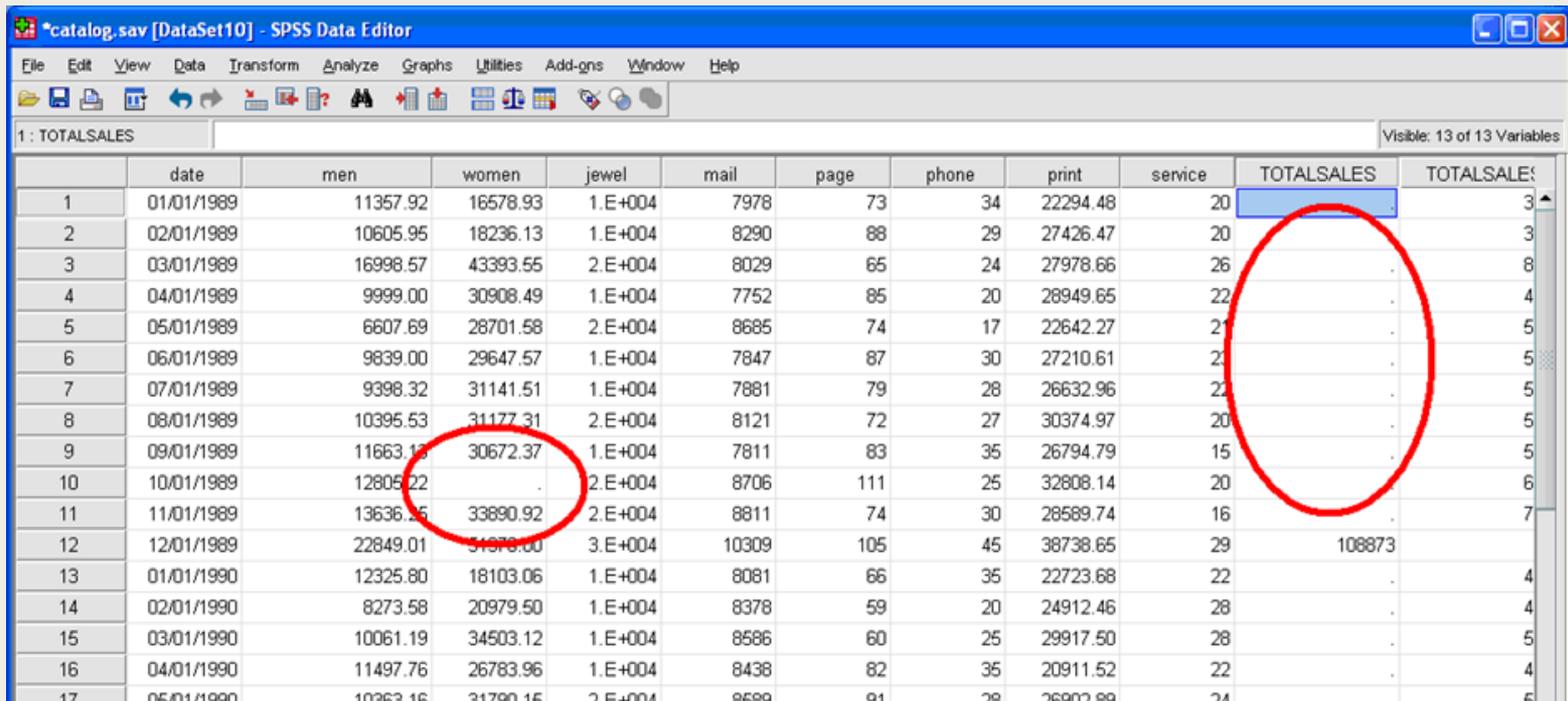


Missing Value

- There are two types of missing values in SPSS: system-missing and user-defined.
- System-missing data is assigned by SPSS when a function cannot be performed.

Missing Value(cont.)

- For example, dividing a number by zero. SPSS indicates that a value is system-missing by one period in the data cell.



The screenshot shows the SPSS Data Editor window for a file named 'catalog.sav'. The data table has 17 rows and 12 columns. The columns are: date, men, women, jewel, mail, page, phone, print, service, TOTALSALES, and TOTALSALES. The 'TOTALSALES' column contains values for rows 1 through 12, but row 13 has a missing value (represented by a period). A red circle highlights the cell containing the period in the 'TOTALSALES' column for row 13. Another red circle highlights the cell containing the value '30672.37' in the 'jewel' column for row 9.

	date	men	women	jewel	mail	page	phone	print	service	TOTALSALES	TOTALSALES
1	01/01/1989	11357.92	16578.93	1.E+004	7978	73	34	22294.48	20	.	3
2	02/01/1989	10605.95	18236.13	1.E+004	8290	88	29	27426.47	20	.	3
3	03/01/1989	16998.57	43393.55	2.E+004	8029	65	24	27978.66	26	.	8
4	04/01/1989	9999.00	30908.49	1.E+004	7752	85	20	28949.65	22	.	4
5	05/01/1989	6607.69	28701.58	2.E+004	8685	74	17	22642.27	21	.	5
6	06/01/1989	9839.00	29647.57	1.E+004	7847	87	30	27210.61	21	.	5
7	07/01/1989	9398.32	31141.51	1.E+004	7881	79	28	26632.96	22	.	5
8	08/01/1989	10395.53	31177.31	2.E+004	8121	72	27	30374.97	20	.	5
9	09/01/1989	11663.13	30672.37	1.E+004	7811	83	35	26794.79	15	.	5
10	10/01/1989	12805.22	.	2.E+004	8706	111	25	32808.14	20	.	6
11	11/01/1989	13636.26	33890.92	2.E+004	8811	74	30	28589.74	16	.	7
12	12/01/1989	22849.01	31878.00	3.E+004	10309	105	45	38738.65	29	108873	
13	01/01/1990	12325.80	18103.06	1.E+004	8081	66	35	22723.68	22	.	4
14	02/01/1990	8273.58	20979.50	1.E+004	8378	59	20	24912.46	28	.	4
15	03/01/1990	10061.19	34503.12	1.E+004	8586	60	25	29917.50	28	.	5
16	04/01/1990	11497.76	26783.96	1.E+004	8438	82	35	20911.52	22	.	4
17	05/01/1990	10363.16	31790.15	2.E+004	8589	91	28	26902.89	24	.	5

Analyze data With SPSS

■ Descriptive Statistics:

- ***Descriptive statistics** are numbers that are used to summarize and describe data. The word "data" refers to the information that has been collected from an experiment, a survey, a historical record, etc.*
- ***Descriptive statistics** can be used to summarize the data. If your data is categorical, try the frequencies or crosstabs procedures. If your data is scale level, try summaries or descriptives.*

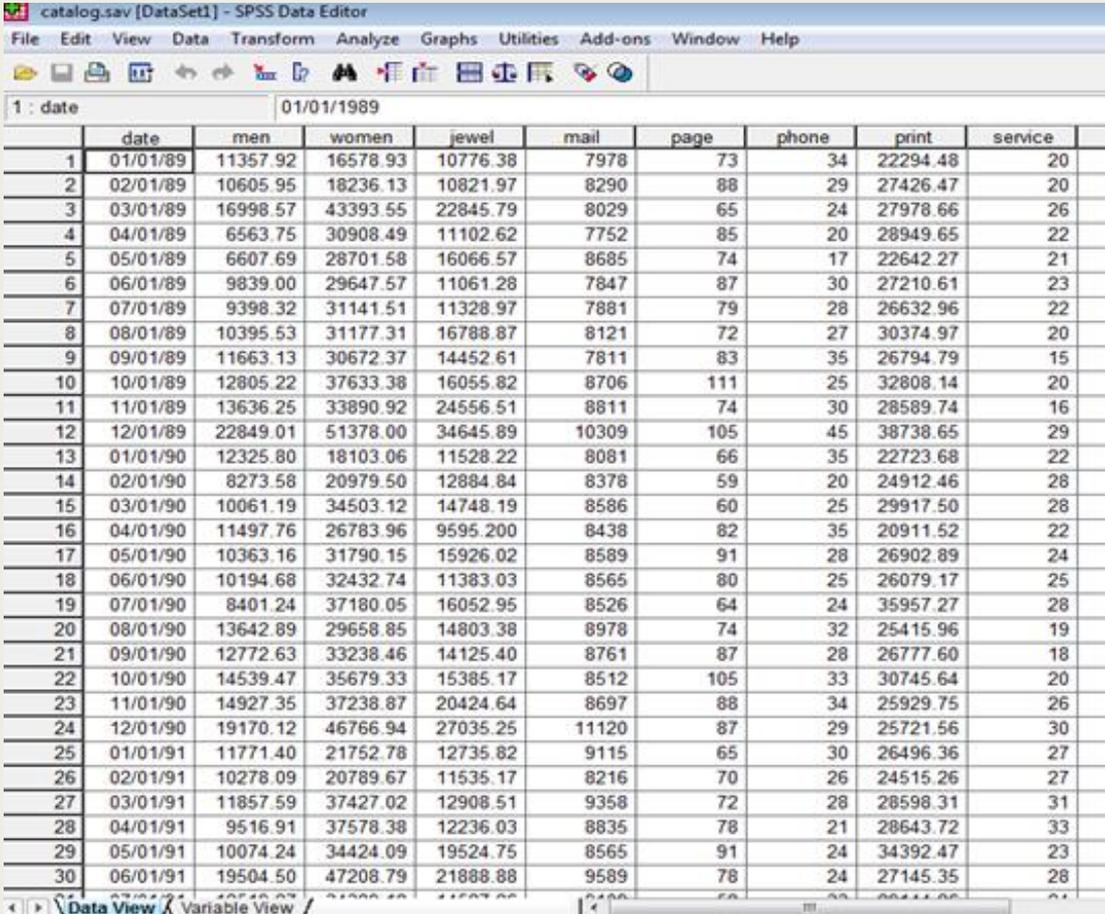
Applying Descriptive Statistics

■ Sample 1

- *Click on FILE → OPEN → DATA*
- *Click COMPUTER → LOCAL DISK C:/*
- *Click PROGRAM FILES → SPSS Eval*
- *Click TUTORIAL → SAMPLE FILES*
- *Select CATALOG.SAV and open*

Applying Descriptive Statistics(cont.)

Lets say we are interested in learning more about the number of customer service representatives (*service*).

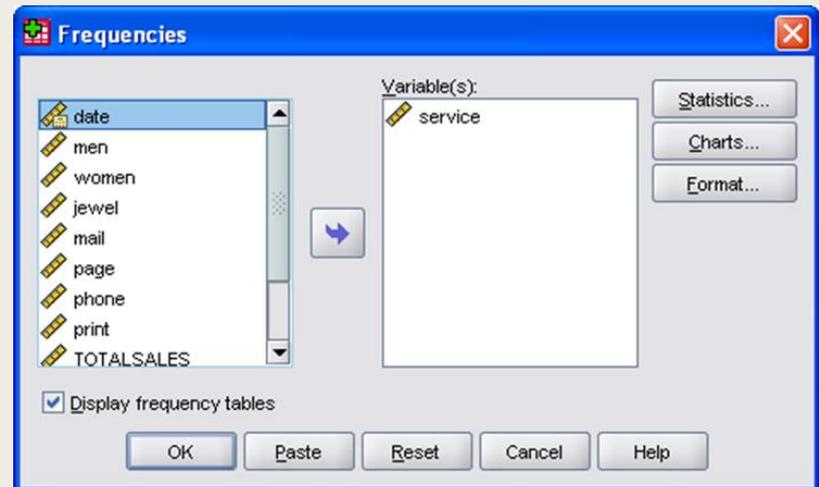


The screenshot shows the SPSS Data Editor window for a file named 'catalog.sav'. The data is displayed in a grid format with the following columns: date, men, women, jewel, mail, page, phone, print, and service. The rows represent monthly data from 1989 to 1991.

	date	men	women	jewel	mail	page	phone	print	service
1	01/01/89	11357.92	16578.93	10776.38	7978	73	34	22294.48	20
2	02/01/89	10605.95	18236.13	10821.97	8290	88	29	27426.47	20
3	03/01/89	16998.57	43393.55	22845.79	8029	65	24	27978.66	26
4	04/01/89	6563.75	30908.49	11102.62	7752	85	20	28949.65	22
5	05/01/89	6607.69	28701.58	16066.57	8685	74	17	22642.27	21
6	06/01/89	9839.00	29647.57	11061.28	7847	87	30	27210.61	23
7	07/01/89	9398.32	31141.51	11328.97	7881	79	28	26632.96	22
8	08/01/89	10395.53	31177.31	16788.87	8121	72	27	30374.97	20
9	09/01/89	11663.13	30672.37	14452.61	7811	83	35	26794.79	15
10	10/01/89	12805.22	37633.38	16055.82	8706	111	25	32808.14	20
11	11/01/89	13636.25	33890.92	24556.51	8811	74	30	28589.74	16
12	12/01/89	22849.01	51378.00	34645.89	10309	105	45	38738.65	29
13	01/01/90	12325.80	18103.06	11528.22	8081	66	35	22723.68	22
14	02/01/90	8273.58	20979.50	12884.84	8378	59	20	24912.46	28
15	03/01/90	10061.19	34503.12	14748.19	8586	60	25	29917.50	28
16	04/01/90	11497.76	26783.96	9595.200	8438	82	35	20911.52	22
17	05/01/90	10363.16	31790.15	15926.02	8589	91	28	26902.89	24
18	06/01/90	10194.68	32432.74	11383.03	8565	80	25	26079.17	25
19	07/01/90	8401.24	37180.05	16052.95	8526	64	24	35957.27	28
20	08/01/90	13642.89	29658.85	14803.38	8978	74	32	25415.96	19
21	09/01/90	12772.63	33238.46	14125.40	8761	87	28	26777.60	18
22	10/01/90	14539.47	35679.33	15385.17	8512	105	33	30745.64	20
23	11/01/90	14927.35	37238.87	20424.64	8697	88	34	25929.75	26
24	12/01/90	19170.12	46766.94	27035.25	11120	87	29	25721.56	30
25	01/01/91	11771.40	21752.78	12735.82	9115	65	30	26496.36	27
26	02/01/91	10278.09	20789.67	11535.17	8216	70	26	24515.26	27
27	03/01/91	11857.59	37427.02	12908.51	9358	72	28	28598.31	31
28	04/01/91	9516.91	37578.38	12236.03	8835	78	21	28643.72	33
29	05/01/91	10074.24	34424.09	19524.75	8565	91	24	34392.47	23
30	06/01/91	19504.50	47208.79	21888.88	9589	78	24	27145.35	28

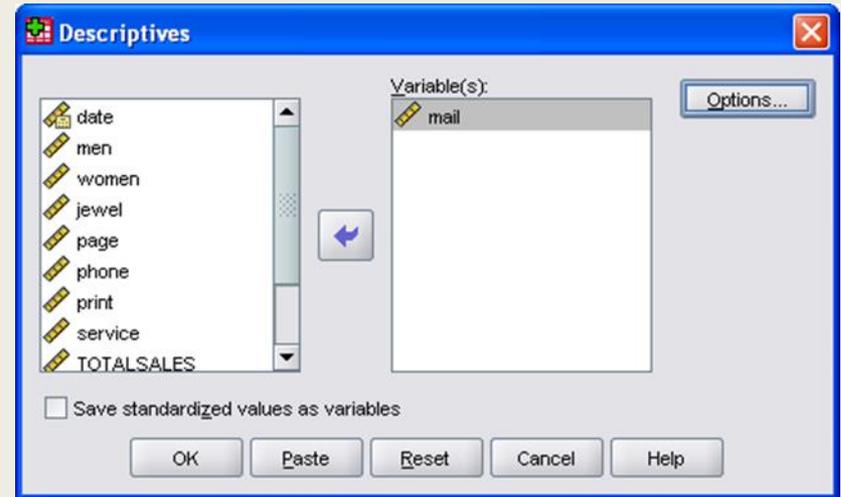
Applying Descriptive Statistics(cont.)

- Click ANALYZE
- Click DESCRIPTIVE STATISTICS
- Click FREQUENCIES
- Choose *service* from the list.



Applying Descriptive Statistics(cont.)

- Sample2
- Lets say we want to learn more about the number of catalogs mailed (*mail*).
- Click ANALYZE
- Click DESCRIPTIVE STATISTICS
- Click DESCRIPTIVES
- Move *MAIL* over with the arrow
- Click Options

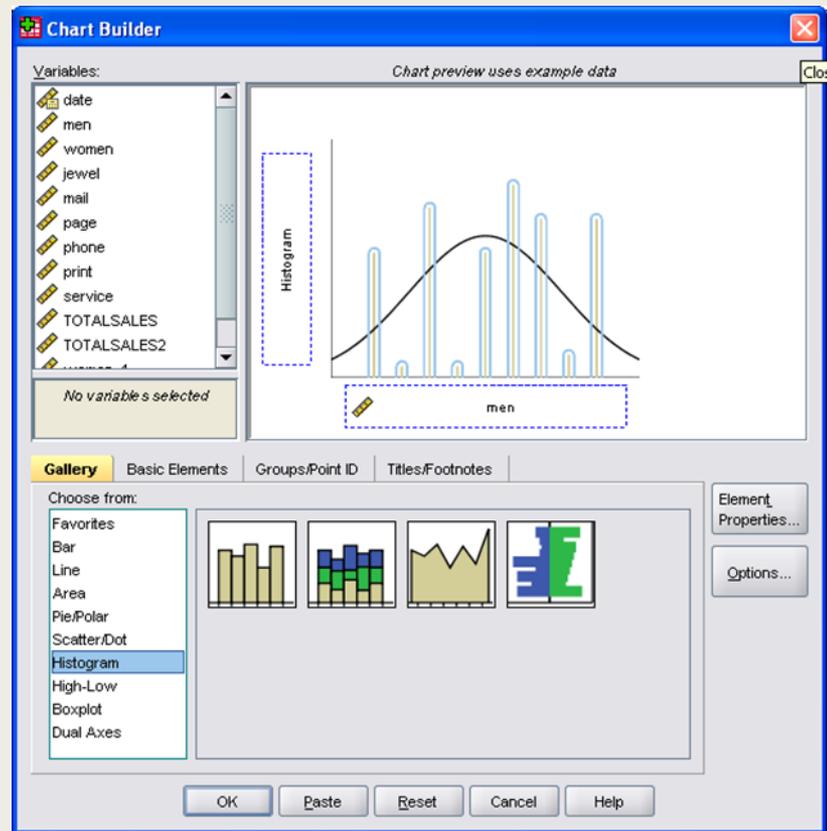


OPTIONS – we can choose which statistics we are interested in looking at

We should remember that these descriptive statistics will not always make sense for every variable. For example, we should not be asking for the mean of nominal variables like gender or race.

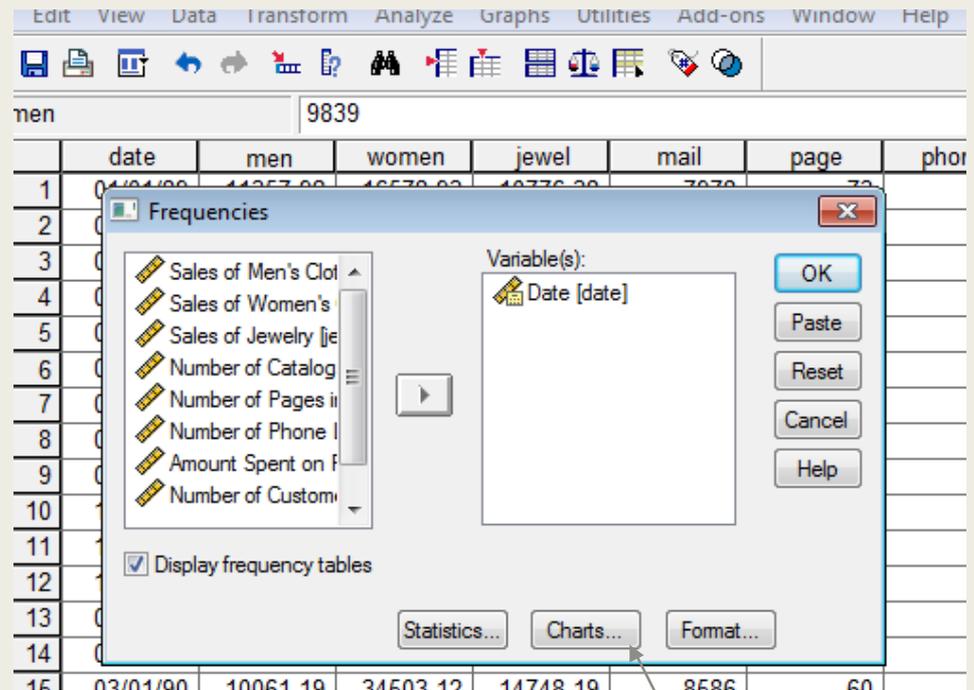
Graphing Data

- Click GRAPH
- Click CHART BUILDER
- Select chart type
- Select variables for x and y axis



Graphing Data(cont.)

- There are other ways to make graphs.
- Click ANALYZE
- Click DESCRIPTIVE STATISTICS
- Click FREQUENCIES
- Click CHART
- Select CHART type



What we have learned!

- Basics of SPSS
- Basic Structures of SPSS
- Missing Value
- Analyze Data
- Graphing Data