

SPSS

Statistical Package for Social Science



INTRODUCTION: WHAT IS SPSS?

- Originally it is an acronym of Statistical Package for the Social Science but now it stands for Statistical Product and Service Solutions
- One of the most popular statistical packages which can perform highly complex data manipulation and analysis with simple instructions

PRE-REQUISITE

- Variables
- Data
- Measurement Scales
- Code Book
- Steps involved in hypothesis testing

VARIABLES

- A **concept** which can take on different quantitative values is called a variable.
- Ex. What are variables you would consider in buying a second hand bike?
 - Brand
 - Type
 - Age
 - Condition (Excellent, good, poor)
 - Price

- *Dichotomous variables* (having two values only)
 - Yes or No
 - Male or Female
- Income, age or a test score are the examples of *continuous variables*.
- These variables may take on any value within a given range, or in some cases, an infinite set.

TYPES OF VARIABLES

- Independent Variable
- Dependent Variable
- Moderating Variable
- Extraneous Variable

MEASUREMENT SCALES

- The process of assigning numbers to objects in such a way that specific properties of the objects are faithfully represented by specific properties of the numbers.
- Types of Scales:
 - Nominal
 - Ordinal
 - Scale
 - Interval
 - Ratio

NOMINAL SCALE

- Nominal or categorical data is data that comprises of categories that cannot be rank ordered – each category is just different
- ***Example:***
- What is your gender? (Please tick)
 - Male
 - Female

ORDINAL SCALE

- Ordinal data is data that comprises of categories that *can* be rank ordered.

Example:

- How satisfied are you with the level of service you have received? (*please tick*)
 - Very satisfied
 - Somewhat satisfied
 - Neutral
 - Somewhat dissatisfied
 - Very dissatisfied

INTERVAL SCALE

- Interval data measured on a *continuous* scale and has *no* true zero point.
- ***Examples:***
 - Time – moves along a continuous measure or seconds, minutes and so on and is without a zero point of time.
 - Temperature – moves along a continuous measure of degrees and is without a true zero.

RATIO SCALE

- Ratio data measured on a *continuous* scale and *does* have a true zero point.
- Examples:
 - Age
 - Weight
 - Height

CHOICE OF SCALES IN SPSS

- The default is **Scale**, which refers to an **interval or ratio level of measurement**.
- Choose **Nominal** for categorical data,
- and **Ordinal** if your data involve rankings, or ordered values.

PREPARING THE CODE BOOK

- Before you can enter the information from your questionnaire, interviews or experiment into SPSS it is necessary to prepare a 'codebook'.
- This is a summary of the instructions you will use to convert the information obtained from each subject or case into a format that SPSS can understand.
- Sheet of Exercise 1

STARTING WITH SPSS

- SPSS Windows

- Two Windows

- Data Window and Variable Window

- Output Window

DATA EDITOR

- Spreadsheet-like system for defining, entering, editing, and displaying data. Extension of the saved file will be “.sav”

1 : subject 1 Visible: 5 of 5 Variables

	subject	anxiety	tension	score	trial	var	var
1	1	1	1	18	1		
2	1	1	1	14	2		
3	1	1	1	12	3		
4	1	1	1	6	4		
5	2	1	1	19	1		
6	2	1	1	12	2		
7	2	1	1	8	3		
8	2	1	1	4	4		
9	3	1	1	14	1		
10	3	1	1	10	2		
11	3	1	1	6	3		
12	3	1	1	2	4		
13	4	1	2	16	1		
14	4	1	2	12	2		
15	4	1	2	10	3		

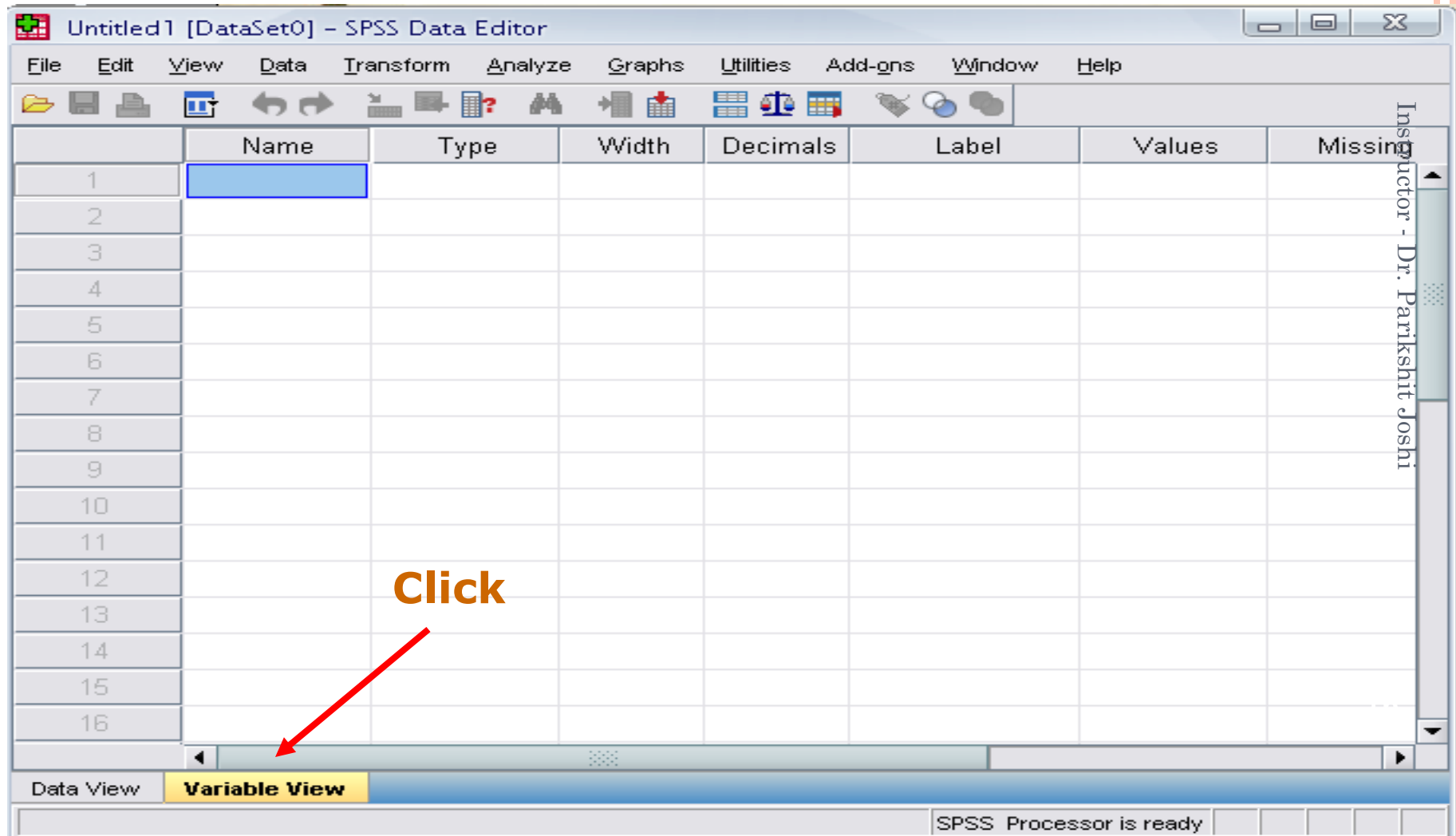
Data View Variable View

SPSS Processor is ready

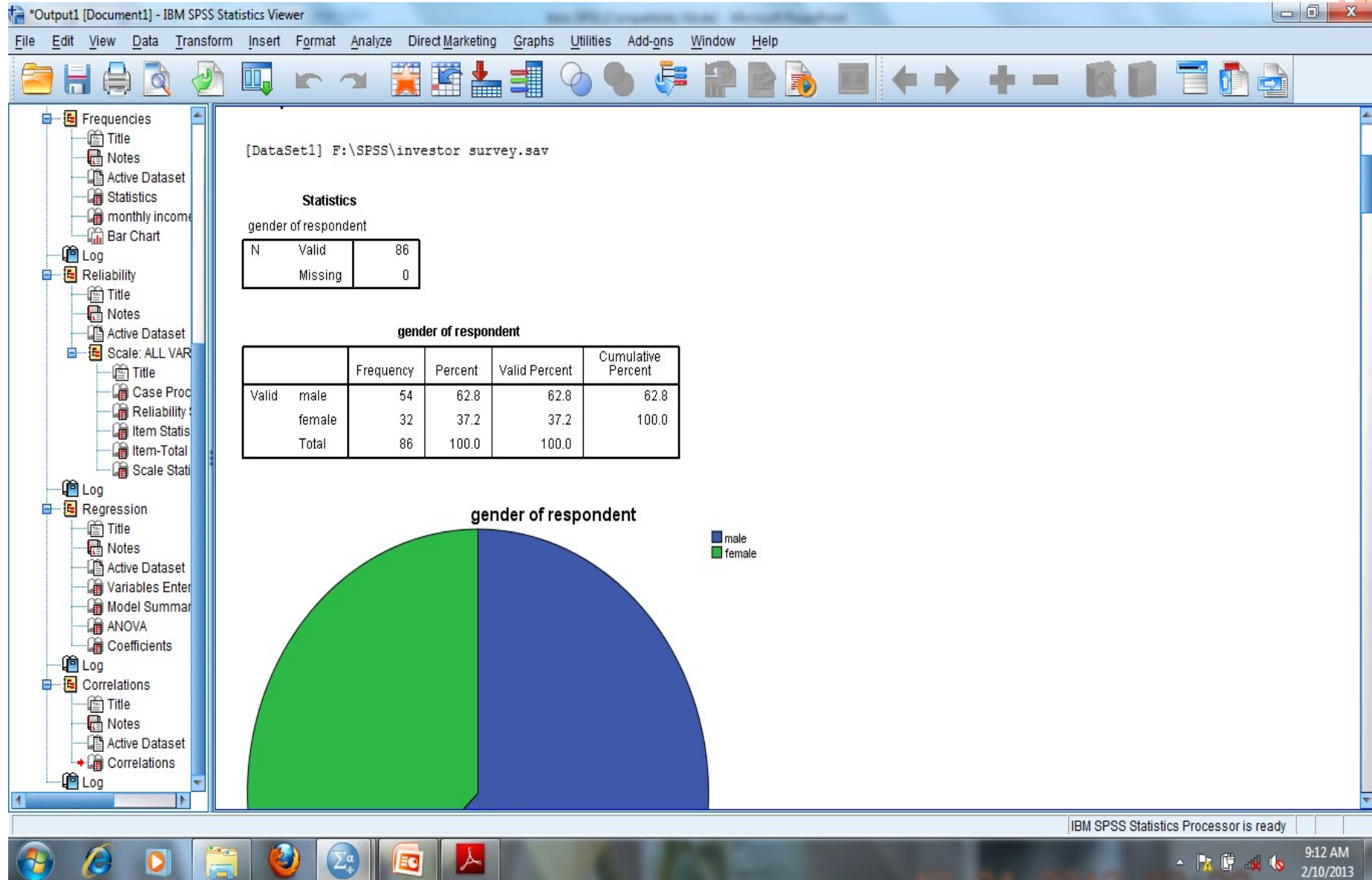
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VARIABLE VIEW WINDOW

- This sheet contains information about the data set that is stored with the dataset



OUTPUT WINDOW



BASIC OPERATIONS IN SPSS

- Variable Entry (adding or deleting a variable)
- Data Entry (adding or deleting the data)
- Saving the data
- Importing data from Excel file
- Checking the data entered
- Sorting the data
- Transforming the data

DATA ANALYSIS WITH SPSS

○ Frequencies

- This analysis produces frequency tables showing frequency counts and percentages of the values of individual variables.

○ Descriptives

- This analysis shows the maximum, minimum, mean, and standard deviation of the variables

○ Correlation analysis

- Correlation analysis is used to describe the strength and direction of the linear relationship between two variables.

○ Reliability

RELIABILITY

- The reliability of a scale indicates how free it is from random error.
- Two frequently used indicators of a scale's reliability are *test-retest* reliability (also referred to as 'temporal stability') and internal consistency.
- The test-retest reliability of a scale is assessed by administering it to the same people on two different occasions, and calculating the correlation between the two scores obtained.

RELIABILITY.....

- The second aspect of reliability that can be assessed is *internal consistency*.
- This is the degree to which the items that make up the scale are all measuring
- the same underlying attribute (i.e. the extent to which the items 'hang together').
- Internal consistency can be measured in a number of ways.
- The most commonly used statistic is *Cronbach's coefficient alpha* (available using SPSS)

RELIABILITY.....

- This statistic provides an indication of the average correlation among all of the items that make up the scale.
- Values range from 0 to 1, with higher values indicating greater reliability.
- While different levels of reliability are required, depending on the nature and purpose of the scale, Nunnally (1978) recommends a minimum level of .7.

thank YOU!!

Warm Regards:

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