Computer Softwares and Online Calculators in Oncological Biostatistics
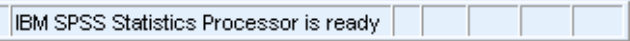
DR SAIKAT DAS

Introduction

- □ SPSS for windows is a computer package that will perform a wide variety of statistical procedures.

- □ Data management and analysis can be handled well with SPSS.

- □ Using SPSS we can manipulate data, make graphs and perform statistical techniques varying from means to regression.

Untitled1 [DataSet0] - IBM SPSS Statistics Data Editor

File   Edit   View   Data   Transform   Analyze   Graphs   Utilities   Add-ons   Window   Help

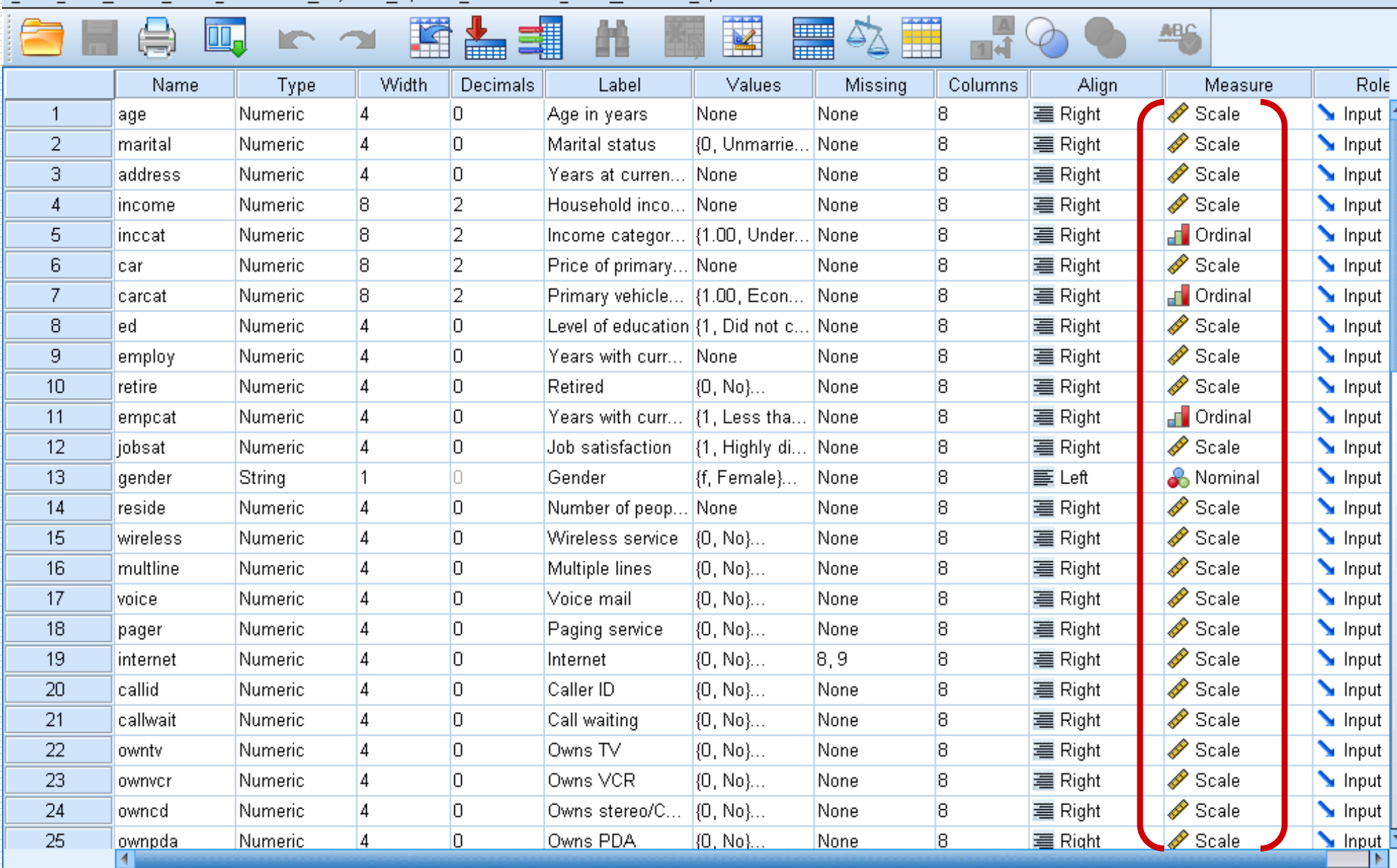Visible: 0 of 0 Variables

	var	var	var	var	var	var	var	var	var	var	var	var
1												
2												
3												
4												
5												
6												

IBM SPSS Statistics 20

IBM SPSS Statistics

IBM.

What would you like to do?

○ Open an existing data source

More Files...
C:\ST17 for frailty model.sav

○ Open another type of file

More Files...

○ Run the tutorial

○ Type in data

○ Run an existing query

○ Create new query using Database Wizard

☐ Don't show this dialog in the future

OK   Cancel

13												
14												
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23												

Data View   Variable View

IBM SPSS Statistics Processor is ready

Types SPSS windows (view)

- ☐ Data view

- ☐ Variable view

- ☐ Output view

- ☐ Chart editor

- ☐ Syntax

SPSS Windows

- **Data View**
  - Used to display data
  - Columns represent variables
  - Rows represent individual units or groups of units that share common values of variables
- **Variable View**
  - Used to display information on variables in dataset
  - TYPE: Allows for various styles of displaying
  - LABEL: Allows for longer description of variable name
  - VALUES: Allows for longer description of variable levels
  - MEASURE: Allows choice of measurement scale
- **Output View**
  - Displays Results of analyses/graphs

Data View window

Data Aravind.sav [DataSet1] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Extensions Window Help

Search application

Visible: 55 of 55 Varia

				upl..	b..		t..	a..	r..	s..		eg..		ment		e		lum..	ar..
1	1	Male	63	14.17	1 Yes	Larynx	4	0	1 No	Yes	5 Proliferative	4	70 Gy	35 CCRT	no	30.30	29.00	15.00	.	3
2	2	Male	55	19.83	1 Yes	Oral cavity	3	1	1 No	No	3 ulcerative	3	60 Gy	33 Surgery	no	44.50	40.50	25.43	2.30	18
3	3	Male	62	17.36	1 Yes	Larynx	4	2	1 Yes	Yes	4 Proliferative	4	70 Gy	35 CCRT	no	72.00	65.00	40.19	24.10	12
4	4	Male	31	22.10	2 Yes	Oral cavity	3	1	2 No	No	4 Proliferative	3	66 Gy	33 Surgery	no	27.39	20.20	13.40	4.30	7
5	5	Male	49	18.69	2 Yes	Oral cavity	3	0	2 Yes	Yes	3 ulcerative	3	66 Gy	33 Surgery	yes	18.83	18.10	12.50	23.89	8
6	6	Female	33	24.45	2 Yes	Oral cavity	3	3	1 No	Yes	4 Proliferative	4	70 Gy	35 CCRT	yes	29.30	25.40	17.20	1.59	8
7	7	Male	45	22.19	2 Yes	Oral cavity	2	1	1 No	No	2 ulcerative	2	60 Gy	33 Surgery	no	34.09	26.10	18.90	67.72	6
8	8	Male	61	21.83	2 Yes	Oropharynx	2	3	1 No	Yes	3 Proliferative	4	66 Gy	33 RT	no	48.80	45.30	32.30	2.40	7
9	9	Male	40	29.24	3 Yes	Oropharynx	4	1	1 Yes	Yes	4 Proliferative	4	70 Gy	35 RT	yes	49.20	46.09	35.40	.	3
10	10	Male	64	30.92	4 Yes	Larynx	3	0	2 No	No	5 ulcerative	3	66 Gy	33 CCRT	no	76.80	74.50	54.30	2.10	3
11	11	Male	71	23.51	2 No	Oropharynx	4	2	2 No	No	5 Proliferative	4	70 Gy	33 CCRT	yes	33.20	30.10	18.50	1.57	34
12	12	Male	56	24.24	2 Yes	Oropharynx	4	3	1 No	No	5 Proliferative	4	70 Gy	35 CCRT	no	34.70	29.00	26.50	.	8
13	13	Male	50	29.17	3 Yes	Oral cavity	4	2	3 No	No	4 Proliferative	4	70 Gy	35 CCRT	no	33.20	30.80	27.80	6.10	14
14	14	Male	41	26.56	3 Yes	Oropharynx	2	2	2 Yes	Yes	4 ulcerative	4	60 Gy	33 Surgery	no	48.88	46.70	36.50	9.16	12
15	15	Male	56	17.40	1 Yes	Oral cavity	4	1	3 No	No	2 Proliferative	4	70 Gy	35 CCRT	no	33.95	32.80	19.80	6.20	17
16	16	Male	53	23.18	2 Yes	Oropharynx	4	2	1 No	No	3 Proliferative	4	66 Gy	33 CCRT	no	17.24	17.30	14.30	.	17
17	17	Male	56	22.18	2 No	Oropharynx	3	3	3 No	Yes	4 Proliferative	4	60 Gy	33 Surgery	yes	27.40	16.50	9.60	5.89	6
18	18	Male	57	18.38	1 Yes	Oral cavity	3	2	2 No	No	3 Proliferative	4	66 Gy	33 CCRT	no	29.25	28.90	25.40	5.40	7
19	19	Male	40	23.14	2 Yes	Oral cavity	3	1	2 No	Yes	2 Proliferative	3	66 Gy	33 CCRT	yes	18.36	18.40	17.60	4.39	6
20	20	Male	50	29.42	3 Yes	Oral cavity	4	2	2 Yes	No	4 ulcerative	4	66 Gy	33 CCRT	yes	18.10	16.80	11.20	4.35	8
21	21	Male	73	20.70	2 Yes	Larynx	2	0	2 No	Yes	2 Proliferative	2	66 Gy	33 CCRT	yes	46.40	47.00	28.90	1.12	3
22	22	Male	52	19.47	2 Yes	Larynx	4	1	2 No	No	2 Proliferative	4	66 Gy	33 CCRT	yes	36.38	36.30	20.30	4.30	7
23	23	Male	44	20.15	2 Yes	Oral cavity	4	2	3 No	Yes	4 Proliferative	4	70 Gy	35 CCRT	yes	27.58	26.30	15.50	1.34	6
24	24	Male	54	22.89	2 Yes	Larynx	1	0	1 Yes	Yes	4 Proliferative	1	66 Gy	35 RT	no	74.90	74.20	56.70	.	6
25	25	Male	58	21.97	2 Yes	Oropharynx	2	3	2 No	Yes	3 ulcerative	4	66 Gy	33 CCRT	no	36.55	36.40	19.50	2.49	14

Variable View

demo.sav [DataSet4] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	age	Numeric	4	0	Age in years	None	None	8	Right	Scale	Input
2	marital	Numeric	4	0	Marital status	{0, Unmarrie...	None	8	Right	Scale	Input
3	address	Numeric	4	0	Years at curren...	None	None	8	Right	Scale	Input
4	income	Numeric	8	2	Household inco...	None	None	8	Right	Scale	Input
5	inccat	Numeric	8	2	Income categor...	{1.00, Under...	None	8	Right	Ordinal	Input
6	car	Numeric	8	2	Price of primary...	None	None	8	Right	Scale	Input
7	carcat	Numeric	8	2	Primary vehicle...	{1.00, Econ...	None	8	Right	Ordinal	Input
8	ed	Numeric	4	0	Level of education	{1, Did not c...	None	8	Right	Scale	Input
9	employ	Numeric	4	0	Years with curr...	None	None	8	Right	Scale	Input
10	retire	Numeric	4	0	Retired	{0, No}...	None	8	Right	Scale	Input
11	empcat	Numeric	4	0	Years with curr...	{1, Less tha...	None	8	Right	Ordinal	Input
12	jobsat	Numeric	4	0	Job satisfaction	{1, Highly di...	None	8	Right	Scale	Input
13	gender	String	1	0	Gender	{f, Female}...	None	8	Left	Nominal	Input
14	reside	Numeric	4	0	Number of peop...	None	None	8	Right	Scale	Input
15	wireless	Numeric	4	0	Wireless service	{0, No}...	None	8	Right	Scale	Input
16	multline	Numeric	4	0	Multiple lines	{0, No}...	None	8	Right	Scale	Input
17	voice	Numeric	4	0	Voice mail	{0, No}...	None	8	Right	Scale	Input
18	pager	Numeric	4	0	Paging service	{0, No}...	None	8	Right	Scale	Input
19	internet	Numeric	4	0	Internet	{0, No}...	8, 9	8	Right	Scale	Input
20	callid	Numeric	4	0	Caller ID	{0, No}...	None	8	Right	Scale	Input
21	callwait	Numeric	4	0	Call waiting	{0, No}...	None	8	Right	Scale	Input
22	owntv	Numeric	4	0	Owns TV	{0, No}...	None	8	Right	Scale	Input
23	ownvcr	Numeric	4	0	Owns VCR	{0, No}...	None	8	Right	Scale	Input
24	owncd	Numeric	4	0	Owns stereo/C...	{0, No}...	None	8	Right	Scale	Input
25	ownpda	Numeric	4	0	Owns PDA	{0, No}...	None	8	Right	Scale	Input

Data View Variable View
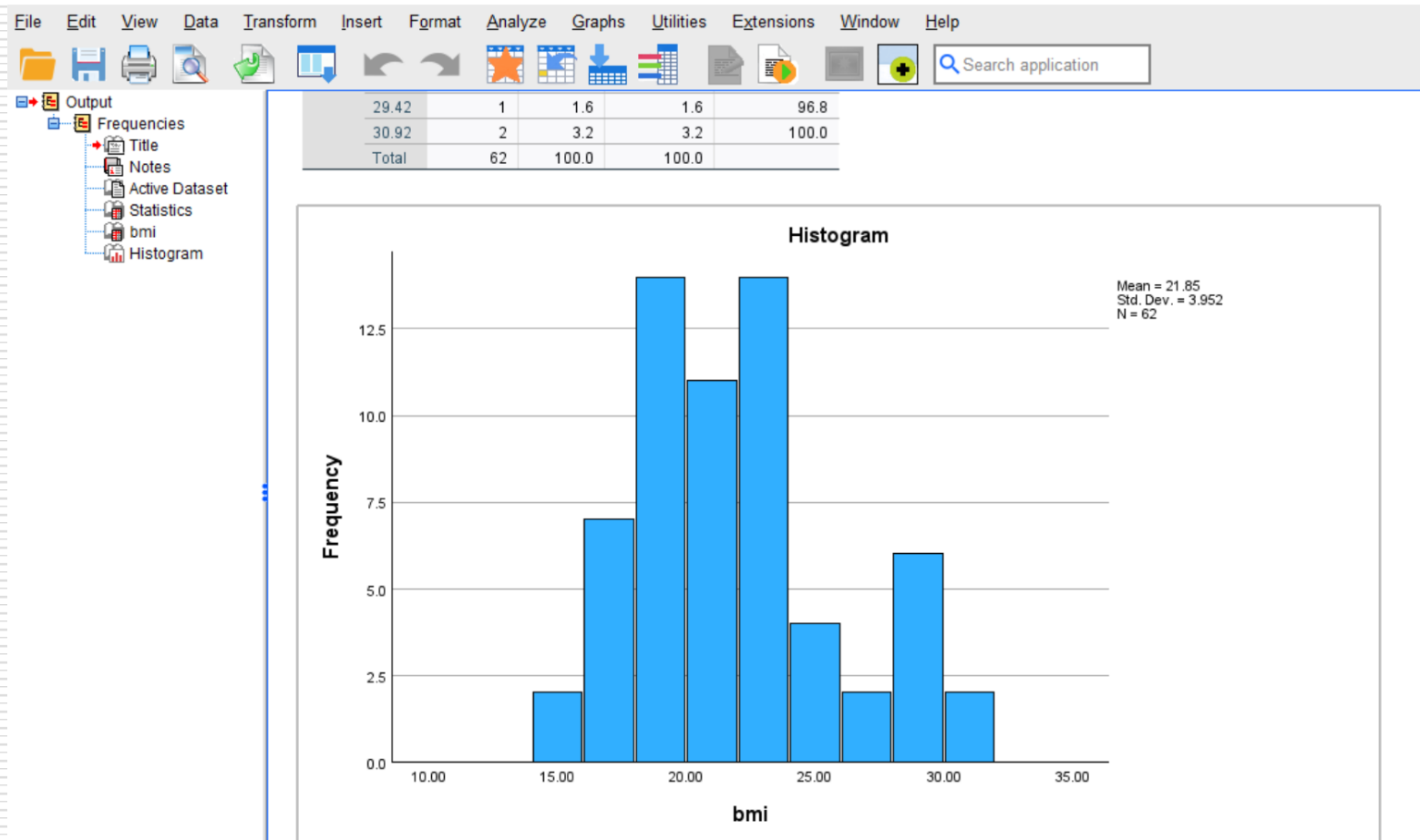
An icon next to each variable provides information about data type and level of measurement.

| Measurement Level	Data Type			
	Numeric	String	Date	Time
Scale (Continuous)		n/a		
Ordinal				
Nominal				

OUTPUT View

Syntax View

Management of data and files

- SPSS can read different types of data files.

- You can open not only SPSS files but also excel and other files.

- You can create a new data set with SPSS.

- You can also edit, delete and view the contents of your data file.

Reading Data (Files)

- ☐ Excel file
- ☐ dbf file
- ☐ SPSS file
- ☐ ...
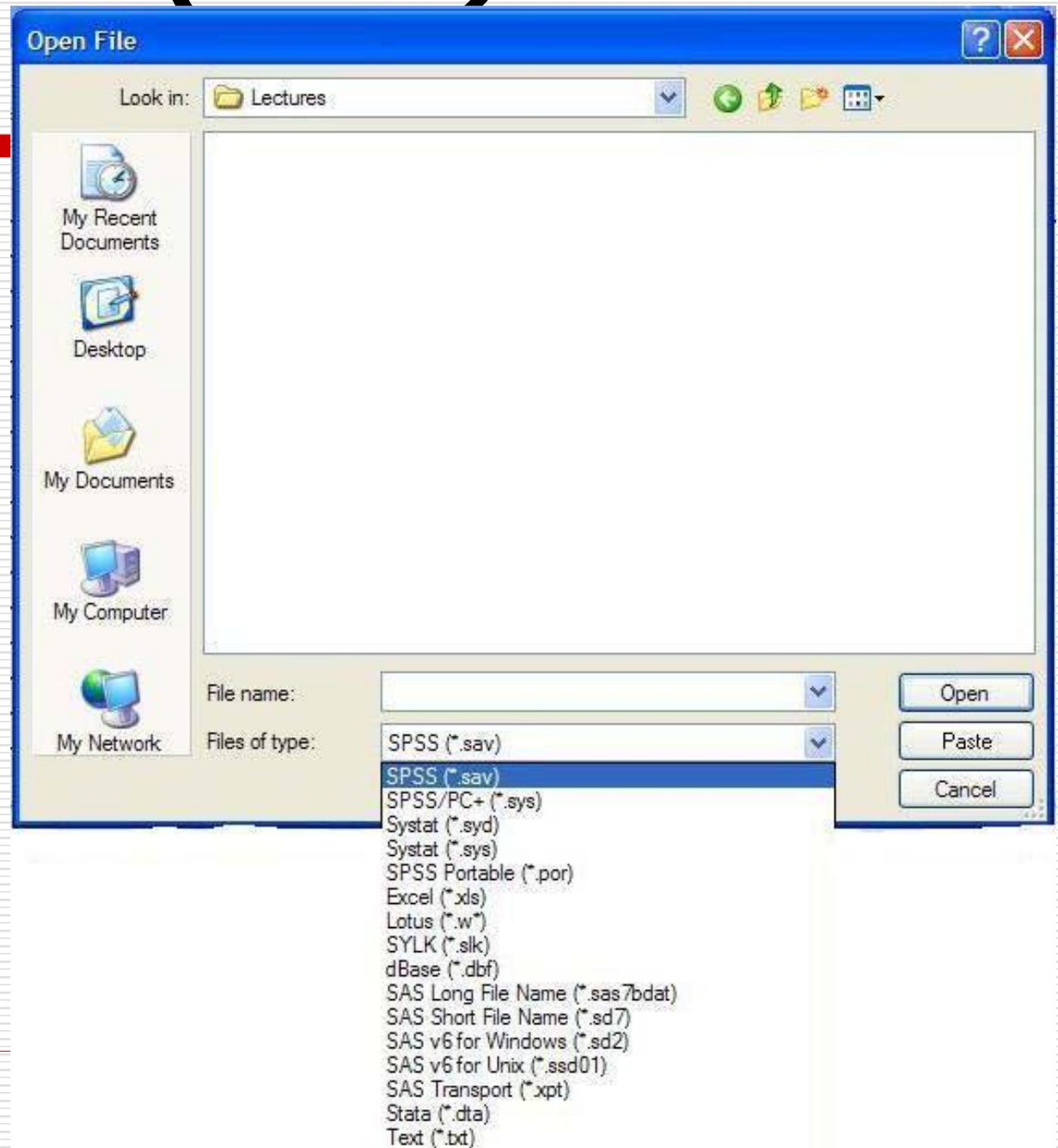
Types of variables *(Level of Measurement)*

- You can select type of variable
  - String
  - Numeric
- You can also select format of variable
  - Categorical (Nominal) ⎫
  - Ordinal ⎭ More Qualitative
  - Interval ⎫
  - Ratio ⎭ More Quantitative

Checking Normality

Click

Analyze > Descriptive Statistics > Explore...

on the top menu as shown below:

Analyze