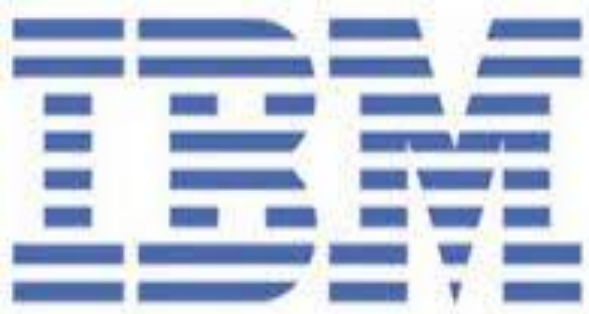




EDM

SPSS



STATISTICAL PACKAGE FOR SOCIAL SCIENCES (SPSS) & Analysis Techniques

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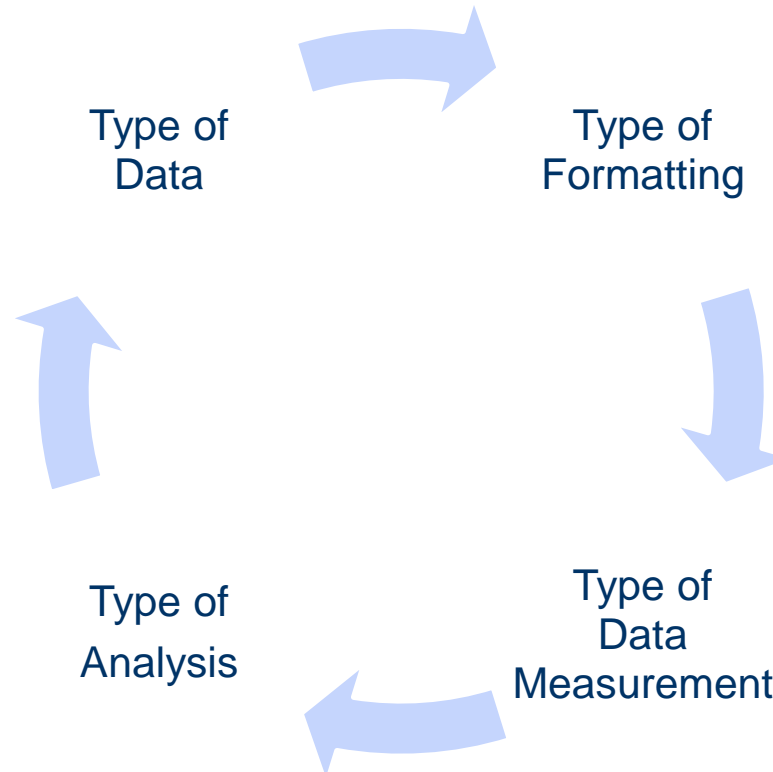
A thick, solid blue horizontal bar is located at the bottom of the slide, extending from the left edge to the right edge.

IF THERE ARE NO RULES, ...

The only reliable and Guarantee bank.No BVN, No Token and no KYC. Just break it down whenever you need ur funds.>:O



Planning for Analysis



Type of Data

- Quantitative Data
 - Counts, frequencies, tallies
 - Statistical analyses (as appropriate)
 - Econometric analyses
- Qualitative Data
 - Coding
 - Patterns, themes, theory building
- Combination
 - Process each element as appropriate

Type of Data & Formatting Technique

- Quantitative Data
 - Must “quantify” the data
 - Convert (“data reduce”) from collection format into numeric database
- Qualitative Data
 - Must process the data (type/enter/describe)
 - Convert from audio/video to text
- Combination
 - Process each element as appropriate

Type of Data Measurement

- Nominal Data
 - A variable can be treated as nominal when its values represent categories with no intrinsic ranking (for example, the department of the company in which an employee works). Examples of nominal variables include region, zip code, and religious
- Ordinal Data
 - A variable can be treated as ordinal when its values represent categories with some intrinsic ranking (for example, levels of service satisfaction from highly dissatisfied to highly satisfied). Examples of ordinal variables include attitude scores representing degree of satisfaction or confidence and preference rating scores.
- Scale/ratio Data
 - A variable can be treated as scale (continuous) when its values represent ordered categories with a meaningful metric, so that distance comparisons between values are appropriate. Examples of scale variables include age in years and income in thousands of dollars.

Data Analysis and Interpretation

- Data analysis
 - An attempt by the researcher to summarize collected data.
- Data Interpretation
 - Attempt to find meaning

Data Analysis

- Researcher immerses self in data to bring order and meaning to vast narrative
 - Come to truly understand what the data are saying
- Cyclical process – data collection occurs simultaneously with data analysis
 - Analysis begins when data collection begins
 - Reading, rereading, intuiting, analyzing, synthesizing, and reporting on data
 - Sometimes called *theoretical sampling* (collect data until saturation is reached)

Planning for Analysis

- A sound research plan successfully matches all these elements with the proper techniques
- Collect the type of data that is most appropriate to answering your question and fits the other parameters of your project (budget, personnel, etc.)

Qualitative Methods:

Three Qualitative Methods

Ethnography

- Focus: study human behaviour in the cultural context in which it is embedded
- Ethnography is the work of describing a culture – the way of life of a cultural group
 - Associated with Cultural Anthropology

Grounded theory

- Focus: develop a theory to explain underlying social processes of a cultural group
- Useful in areas where little is known or when a new perspective is needed
 - Used for exploratory, descriptive studies
- Because the theory emerges from the data, it is said to be *grounded* in the data
 - Foundation in Symbolic Interactionism

Phenomenology

- Focus: reveal the meaning of the *lived experience* from the perspective of participants
- Describe the *essences* of lived experience
 - *Essences*: elements related to the true meaning of something that gives common understanding to the phenomenon under study
 - Conveyed with descriptive language
 - Drawn from Philosophy; used across disciplines

Qualitative Data Collection methods

- In-depth interviews
- Participant Observation
- Focus Group Interviews
- All combination of these

Quantitative Levels of Analysis

- Univariate - simplest form, describe a case in terms of a single variable.
- Bivariate - subgroup comparisons, describe a case in terms of two variables simultaneously.
- Multivariate - analysis of two or more variables simultaneously.

Univariate Analysis

- Describing a case in terms of the distribution of attributes that comprise it.

Example:

- Gender - number of women, number of men.
- You should always begin your analysis by running the basic univariate frequencies and checking to be sure data were entered properly

Univariate Analysis

- Frequency distributions
- Measures of central tendency
 - Mean, Median, Mode

Presenting Univariate Data

Goals:

- Provide reader with the fullest degree of detail regarding the data.
- Present data in a manageable form.
- Simple and straightforward

Subgroup Comparisons

- Describe subsets of cases, subjects or respondents.

Examples

- "Collapsing" response categories:
 - Age categories, Open responses, etc.
- Handling "don't knows"
 - Code separately, make missing if appropriate

Bivariate Analysis

- Describe a case in terms of two variables simultaneously.
 - Example:
 - Gender
 - Attitudes toward equality for men and women
 - How does a respondent's gender affect his or her attitude toward equality for men and women?
- Crosstabulations / Correlations

Constructing Bivariate Tables

- Divide cases into groups according to the attributes of the independent variable.
- Describe each subgroup in terms of attributes of the dependent variable.
- Read the table by comparing the independent variable subgroups in terms of a given attribute of the dependent variable.
- DV goes in the rows, IV goes in the columns

Bivariate Analysis

- Bivariate Tables / Crosstabs are appropriate for all types of variables, but the proper inferential statistic will vary by variable type
- Continuous variables are typically made into categorical variables for this type of analysis
 - Recode variables
 - Example: Create “Age” (18-34, 35-50, 51-65, 66+)

Bivariate Analysis: Correlations

- Bivariate correlation analysis is appropriate for continuous variables (interval, ratio)
- Other types of variables are often recoded into 'Dummy' variables (value 0 or 1) for these purposes
 - Example: Gender becomes two variables 'Male' (1=yes) & 'Female' (1=yes)
- Present in Correlation Matrix

Multivariate Analysis

- Analysis of more than two variables simultaneously.
- Can be used to understand the relationship between multiple variables more fully.
- Most typical: Regression analysis

Multivariate Analysis

- Ordinal (technically inappropriate but it happens), continuous, dummy variables
- Type of regression analysis will depend on the type of variables
 - OLS (continuous)
 - Logistic (other types)

Methods of Quantitative Data Collections

- Primary Sources
 - ❑ Field Observations
 - ❑ Questionnaires
 - ❑ Gathering of information qualitatively and coding, etc.
- Secondary Sources
 - ❑ Journals
 - ❑ Statistical Bulletins
 - ❑ News papers
 - ❑ Periodicals, financial statements, Annual reports, etc.

Quantifying Data

- Before we can do any kind of analysis, we need to quantify our data
- “Quantification” is the process of converting data to a numeric format
 - Convert social science data into a “machine-readable” form, a form that can be read & manipulated by computer programs

Quantifying Data

Some transformations are simple:

- Assign numeric representations to nominal or ordinal variables:
 - Turning *male* into “1” and *female* into “2”
 - Assigning “3” to *Very Interested*, “2” to *Somewhat Interested*, “1” to *Not Interested*
- Assign numeric values to continuous variables:
 - Turning *born in 1973* to “35”
 - Number of children = “02”

Appropriate Types of Analysis

		Independent Variable		
		Nominal	Ordinal	Interval/Ratio
Dependent Variable	Nominal	<i>Crosstabs</i>	<i>Crosstabs</i>	
		Chi-square	Chi-square	
		Lambda	Lambda	
	Ordinal	<i>Crosstabs</i>	<i>Crosstabs</i>	
		Chi-square	Chi-square	
		Lambda	Lambda	
		Gamma		
		Kendall's tau		
		Sommers' <i>d</i>		
Interval/Ratio	<i>Means</i>	<i>Means</i>	<i>Correlate</i>	
	<i>t-test</i>	<i>t-test</i>	Pearson <i>r</i>	
	ANOVA	ANOVA	Regression (<i>R</i>)	

Data Entering and Importing in SPSS

- 1st Method

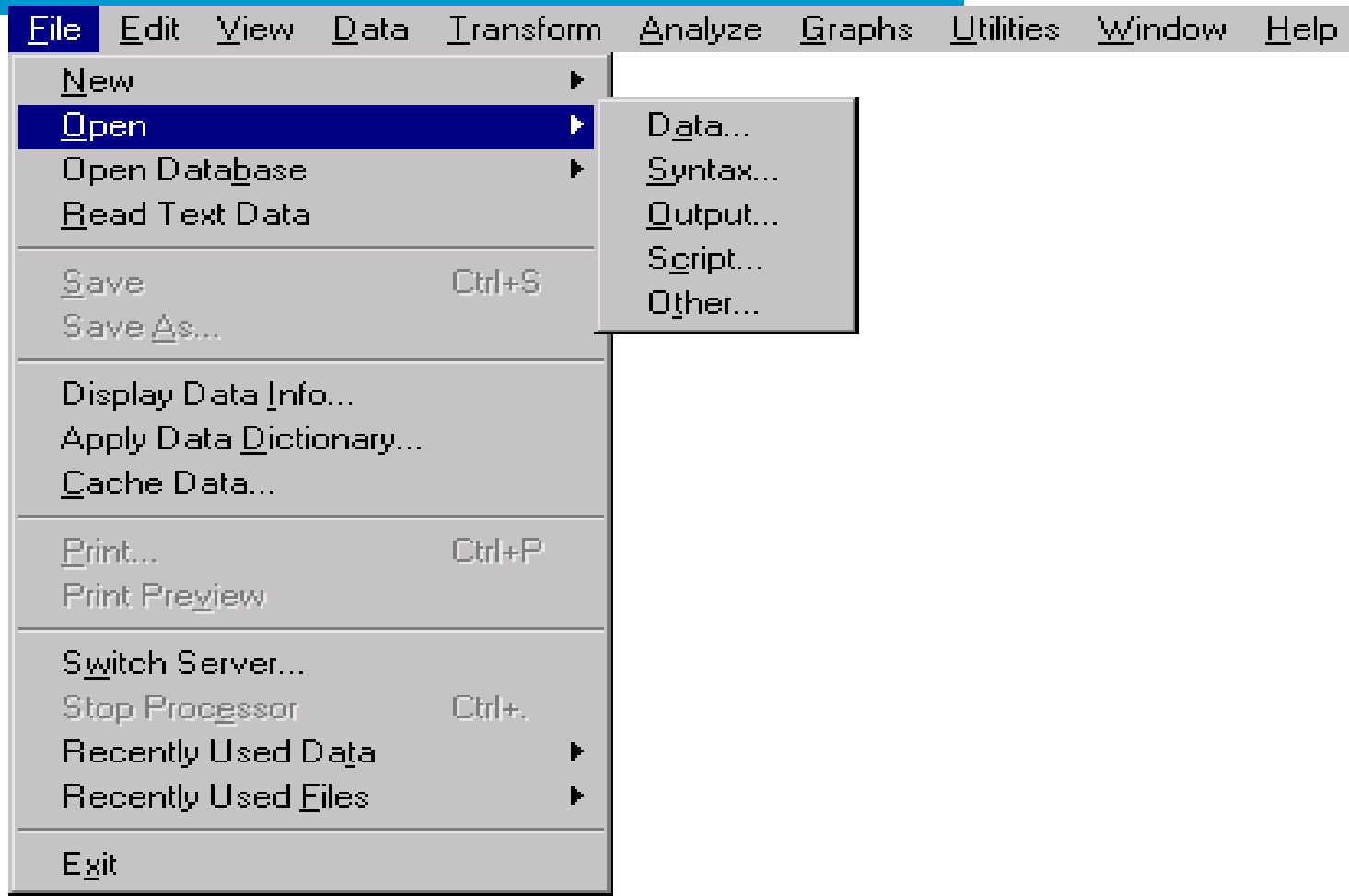
Arrange the data in any spread sheet application such as Microsoft Excel; database applications, such as Microsoft Access, then copy and paste into SPSS spread sheet and decode.

- 2nd Method

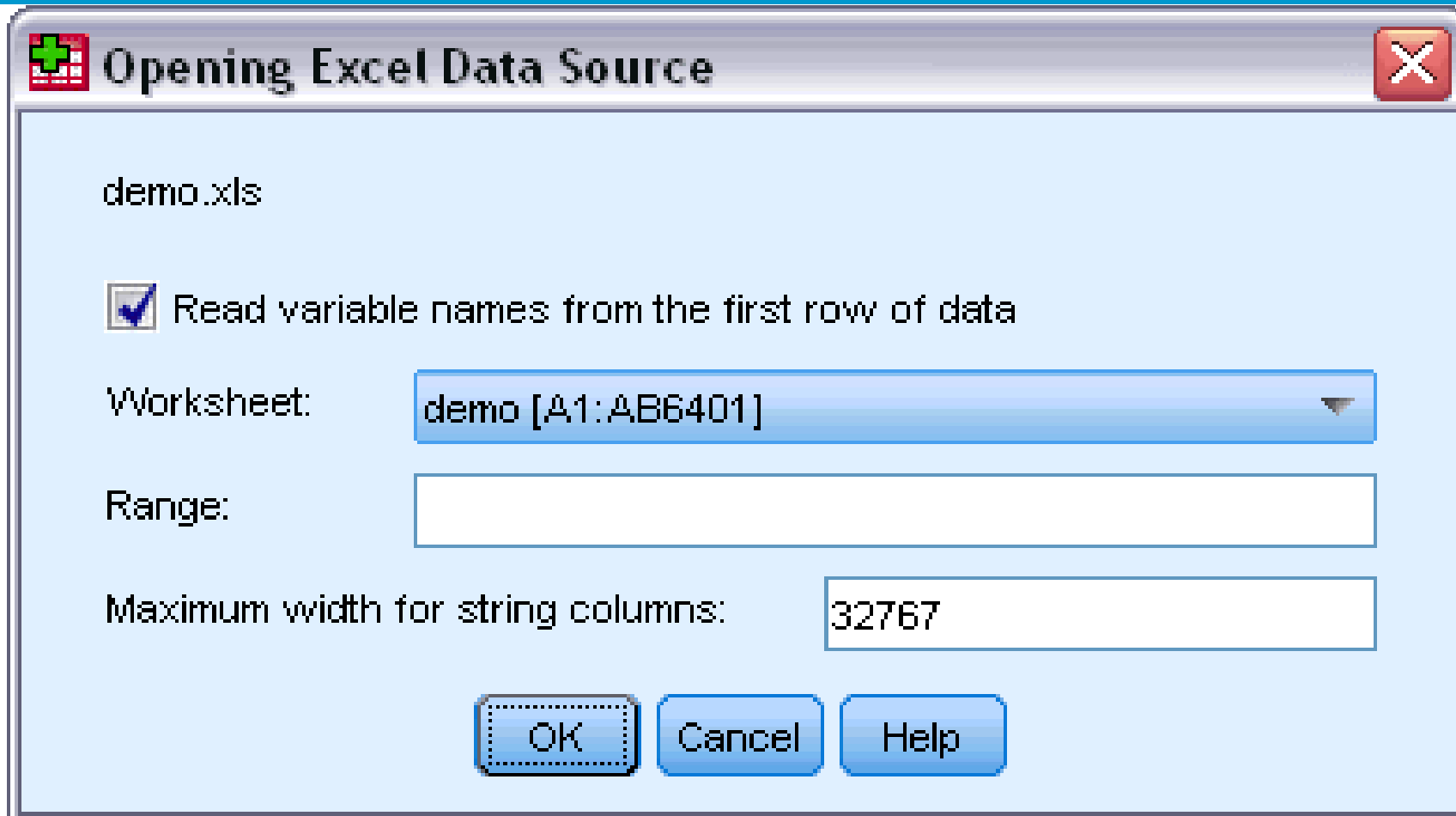
- Input the data directly into SPSS spread sheet and decode

Data opening in SPSS

- Click File
- Click Open
- Chose Data
- On the open data
- Chose Excel file type



Excel Data Source



Opening Excel Data Source

demo.xls

Read variable names from the first row of data

Worksheet: demo [A1:AB6401]

Range:

Maximum width for string columns: 32767

OK Cancel Help

Basic Data View of SPSS

demo.sav - Data Editor

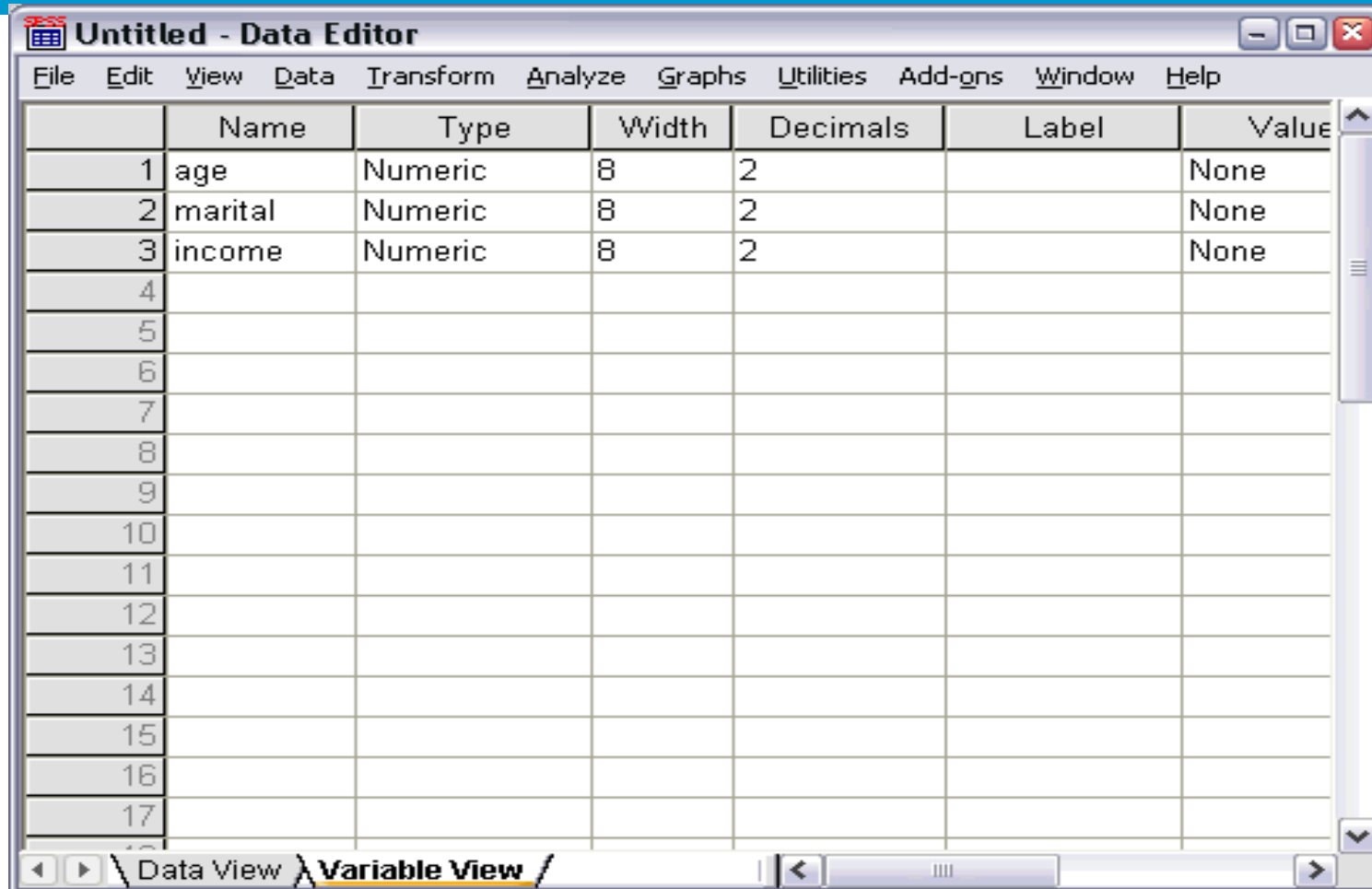
File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help

20 : age 40

	age	marital	address	income	inccat	car
1	55	1	12	72.00	3.00	36.
2	56	0	29	153.00	4.00	76.
3	28	1	9	28.00	2.00	13.
4	24	1	4	26.00	2.00	12.
5	25	0	2	23.00	1.00	11.
6	45	1	9	76.00	4.00	37.
7	42	0	19	40.00	2.00	19.
8	35	0	15	57.00	3.00	28.
9	46	0	26	24.00	1.00	12.
10	34	1	0	89.00	4.00	46.
11	55	1	17	72.00	3.00	35.

Data View Variable View

Using Data Editor



	Name	Type	Width	Decimals	Label	Value
1	age	Numeric	8	2		None
2	marital	Numeric	8	2		None
3	income	Numeric	8	2		None
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

Defining the Data

SPSS Untitled - Data Editor

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

	Name	Type	Width	Decimals	Label
1	age	Numeric	8	0	Respondent's Age
2	marital	Numeric	8	0	Marital Status
3	income	Numeric	8	2	Household Income
4	sex	String	8	0	Gender
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					

Data View Variable View

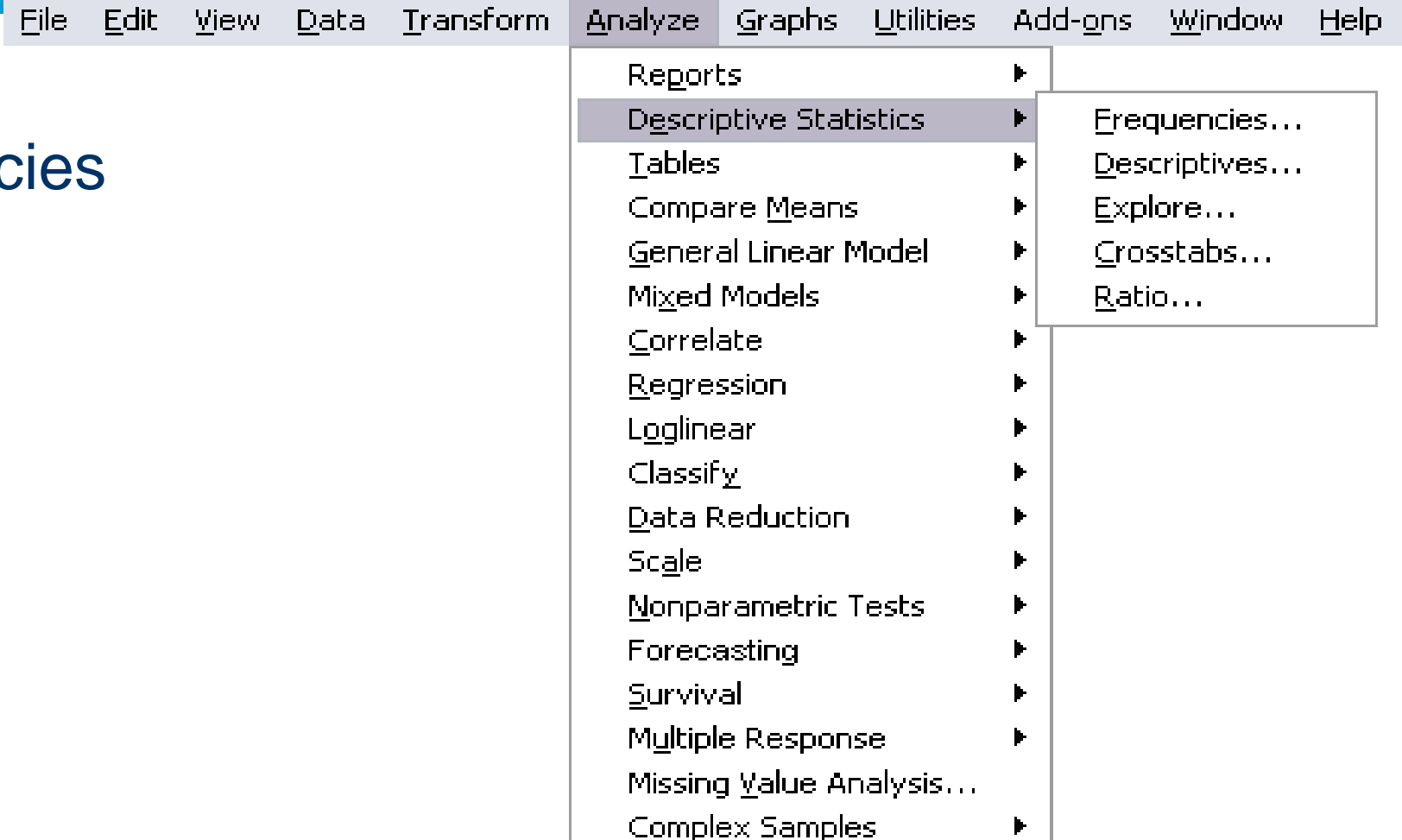
View Label

- Click View
- Chose Value Labels



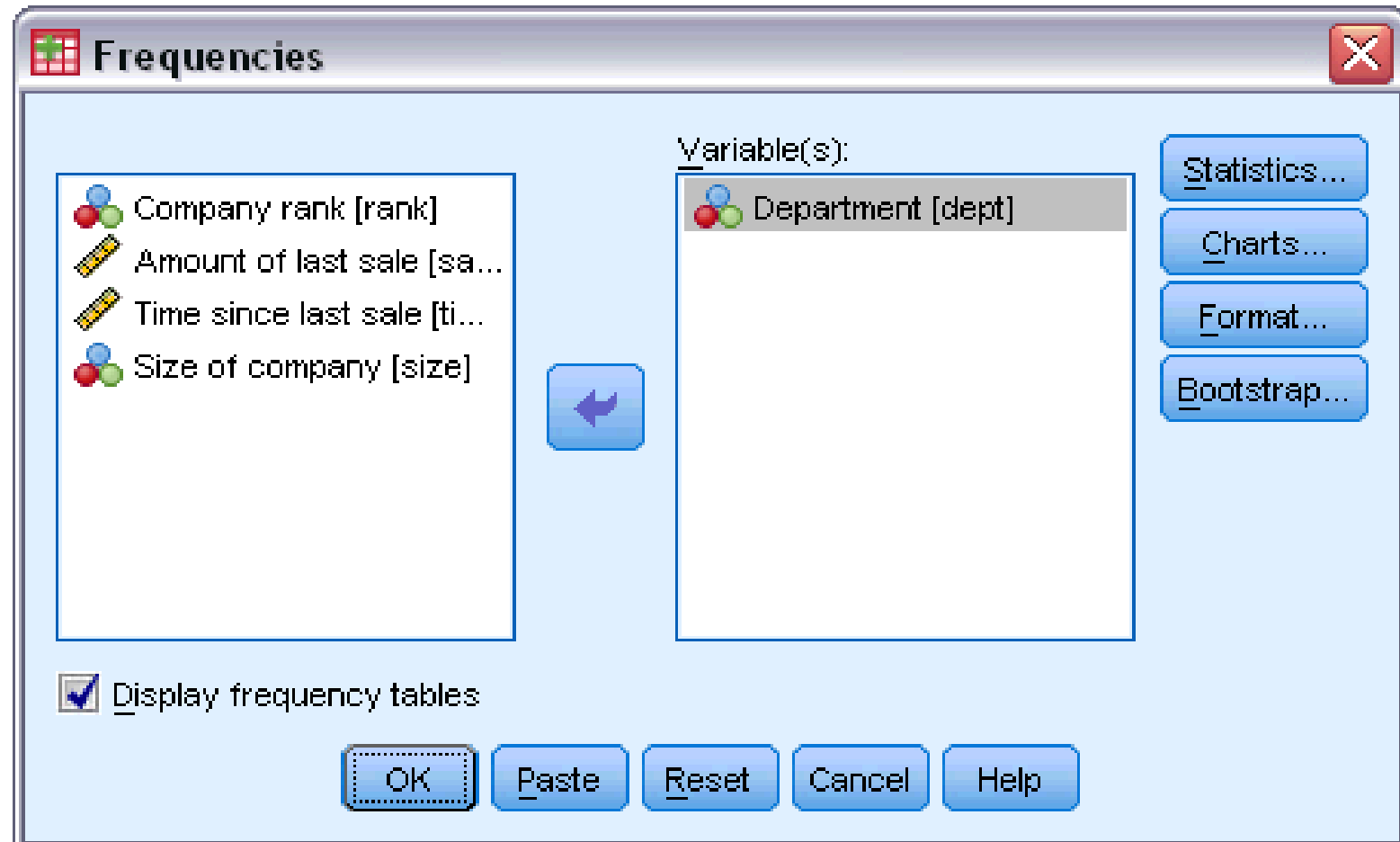
Summary Statistic Using Frequencies

- Click Analyze
- Chose Frequencies



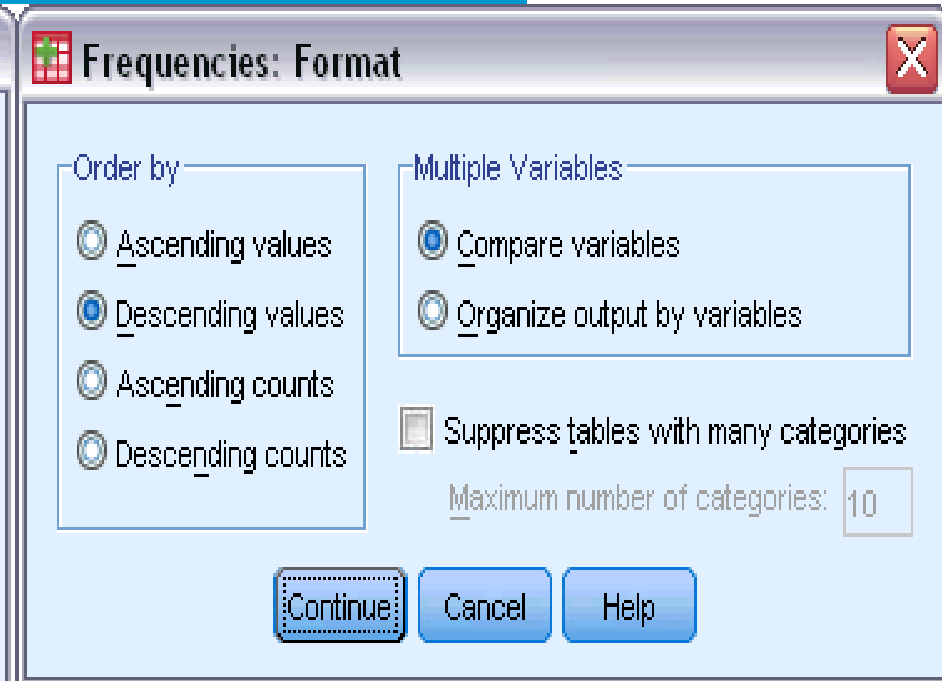
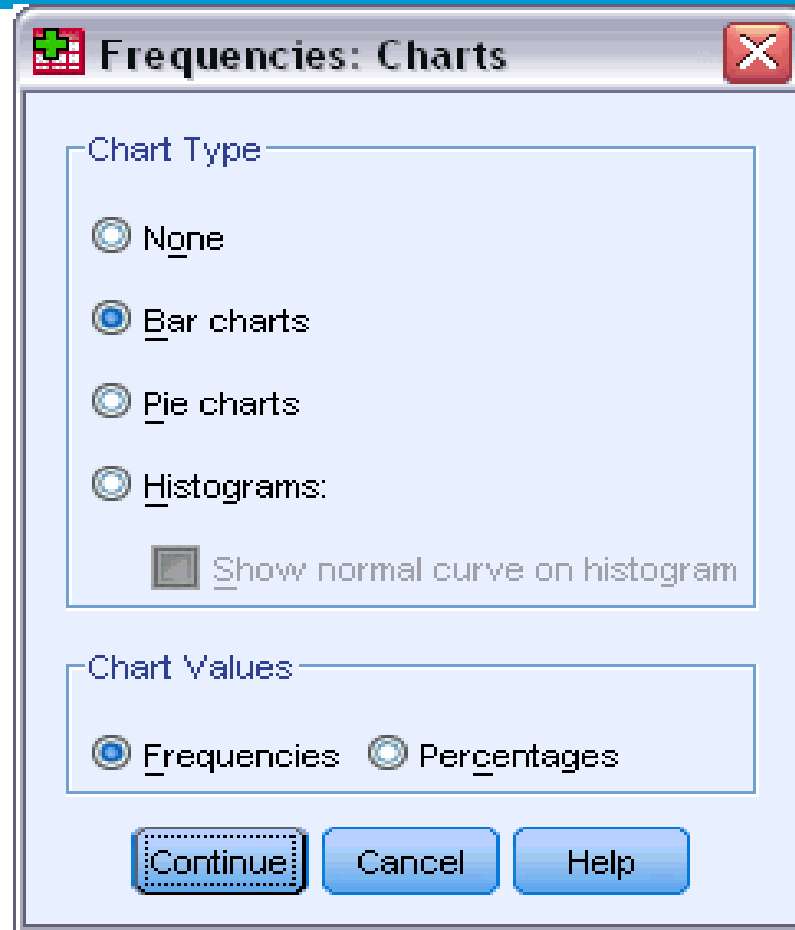
Summary Statistic Using Frequencies

- Click Charts
- Chose type
- Click Ok



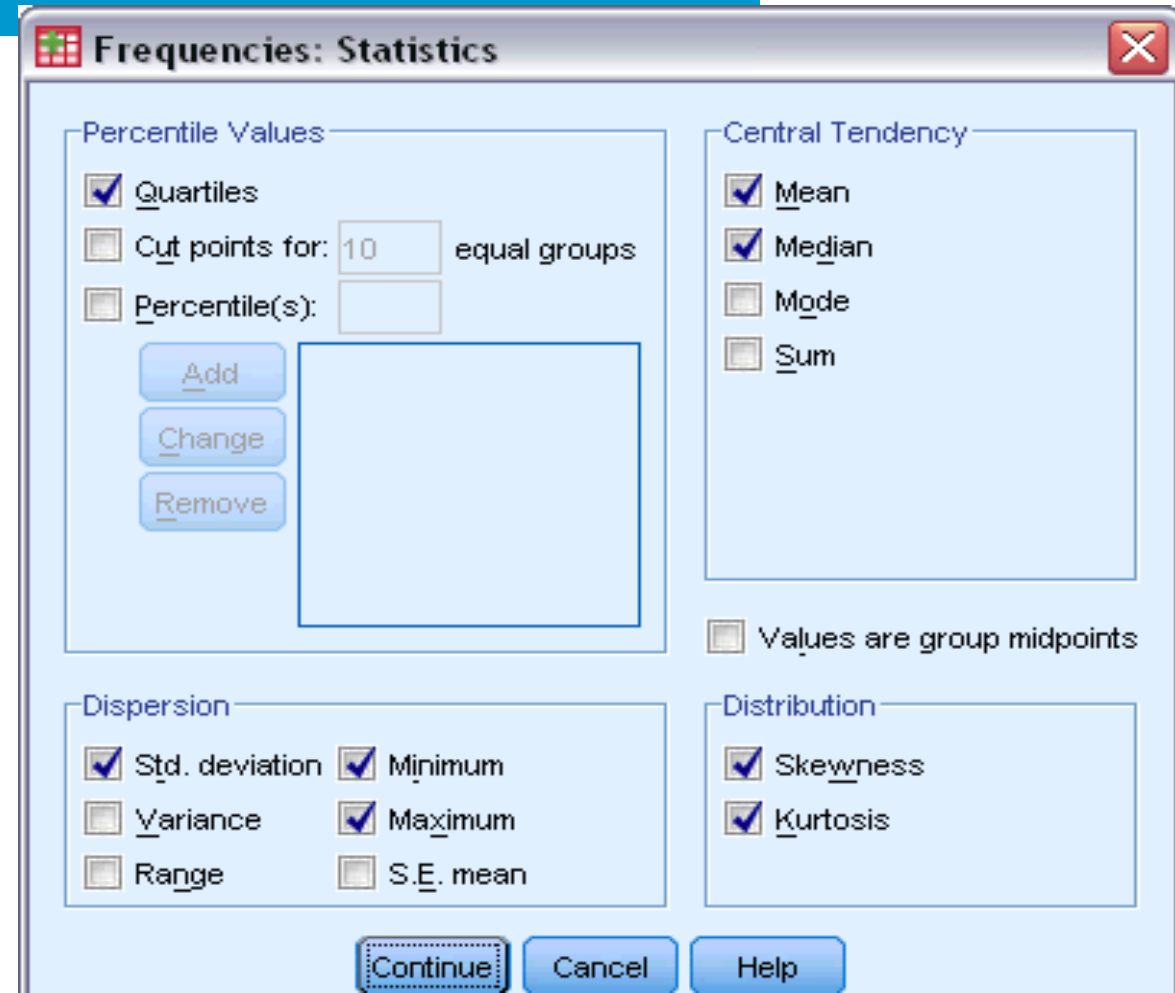
For Bar Chart

- Click Chart
- Choose Bar Charts
- Continue
- Click Format
- Chose suitably



Frequencies For Scale Data

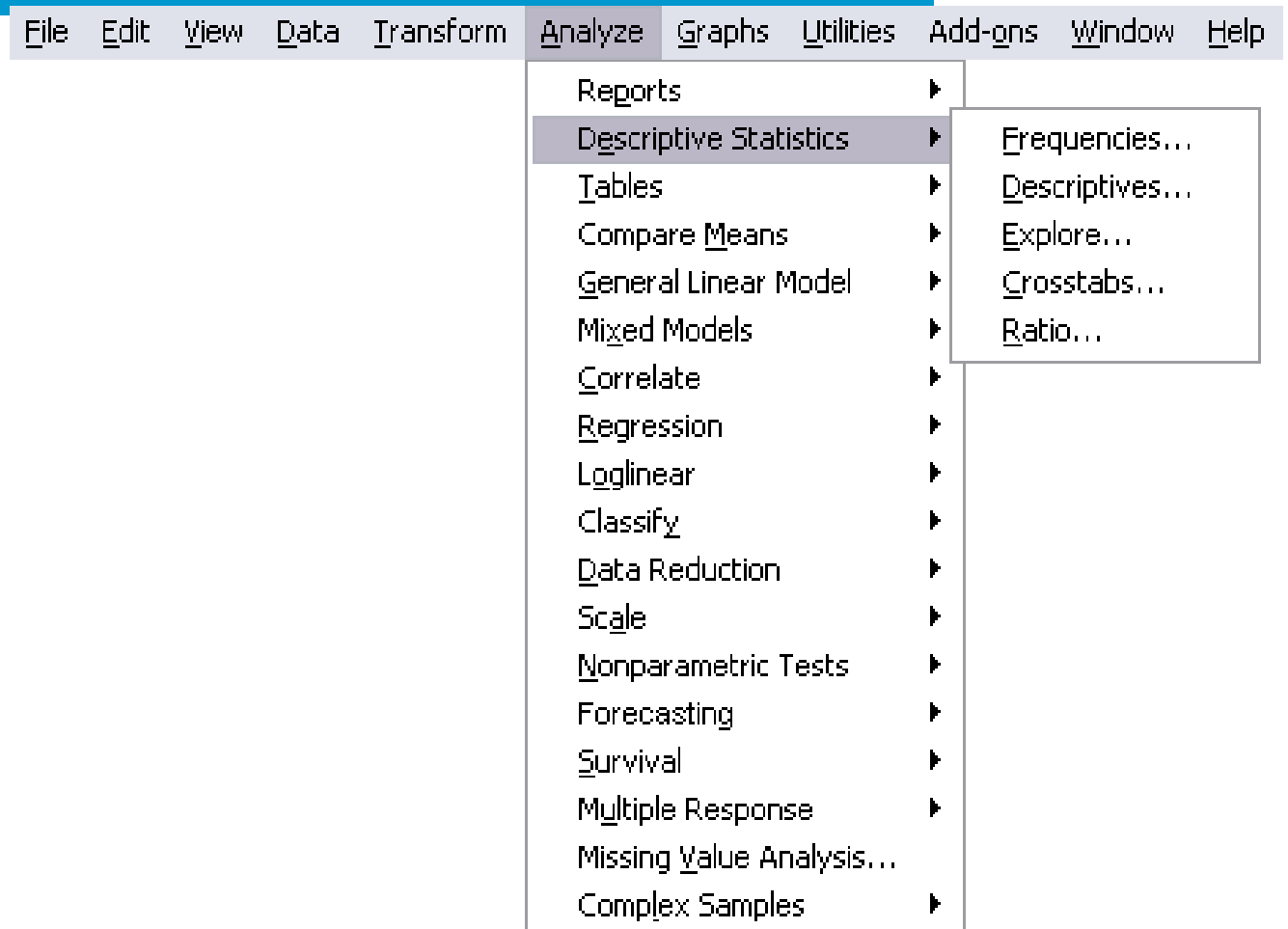
- Click Statistic
- Chose appropriate tests
- Click continue



Summary Statistics Using Descriptives

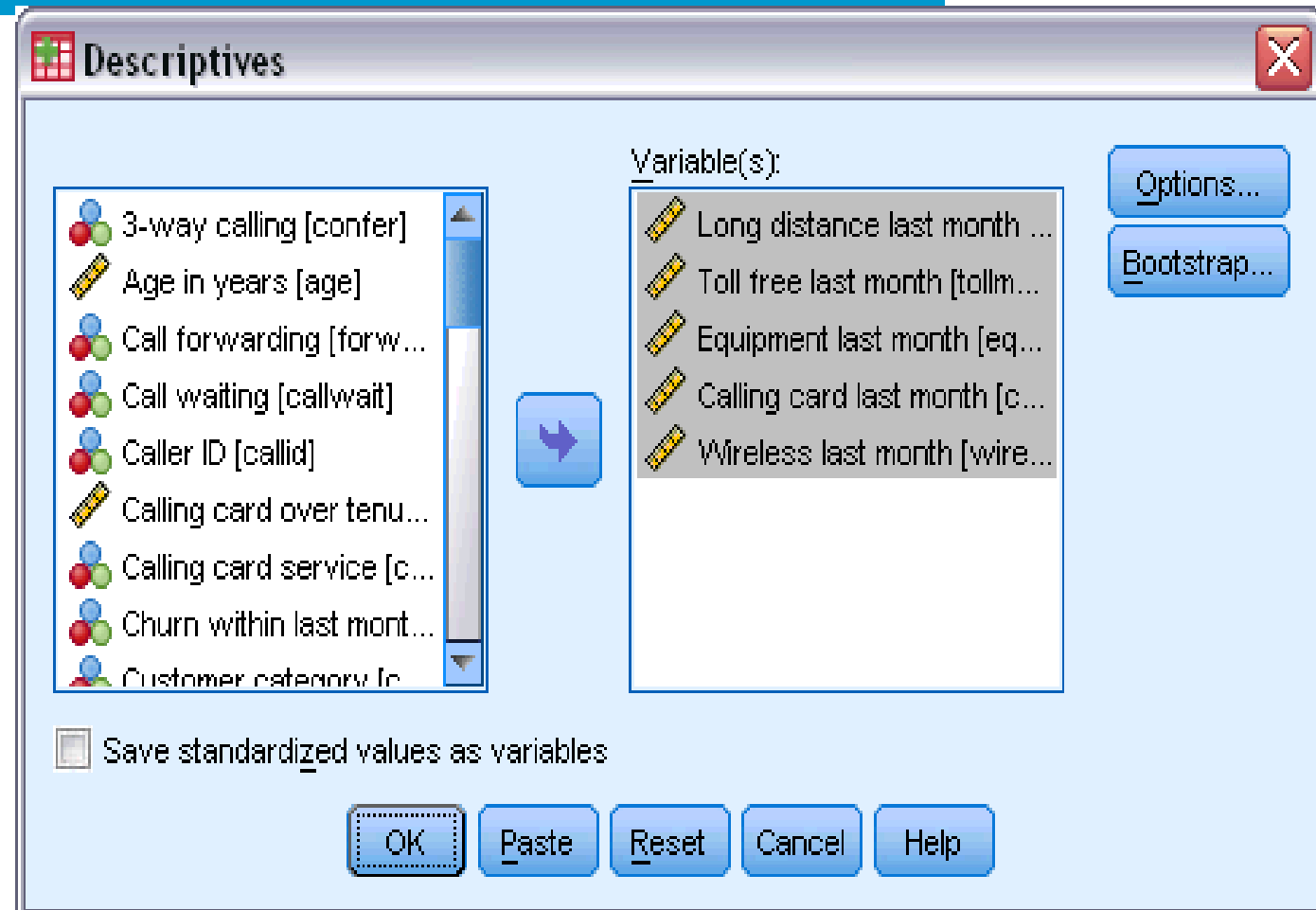
The Descriptive procedure is useful for obtaining summary comparisons of approximately normally distributed scale variables.

- Click analyze
- Select descriptive statistics
- Select descriptives



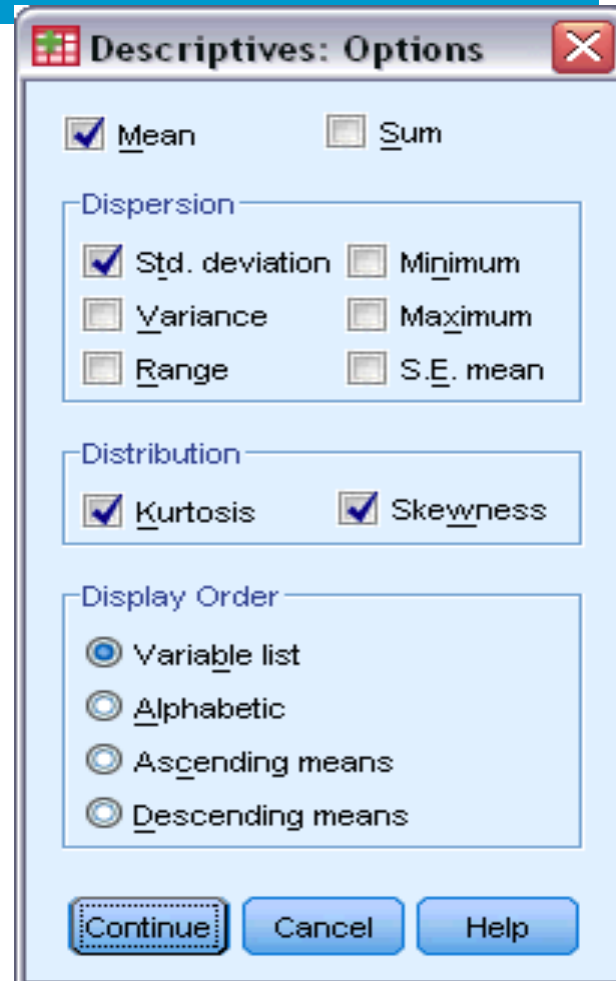
Descriptive Statistics

- Drop variables into the variable(s) box
- Click options
- Chose appropriate tests
- Click Ok



Descriptive Statistics

- Chose appropriate tests
- Click Continue



Descriptive Tests

- **Central of Tendency**

In statistics, a *central tendency* (or, more commonly, a measure of *central tendency*) is a *central* or typical value for a probability distribution. It may also be called a center or location of the distribution. Colloquially, measures of *central tendency* are often called averages.

- **Mean**

- ❑ The mean is the average of the numbers: a calculated "central" value of a set of numbers.

- **Median**

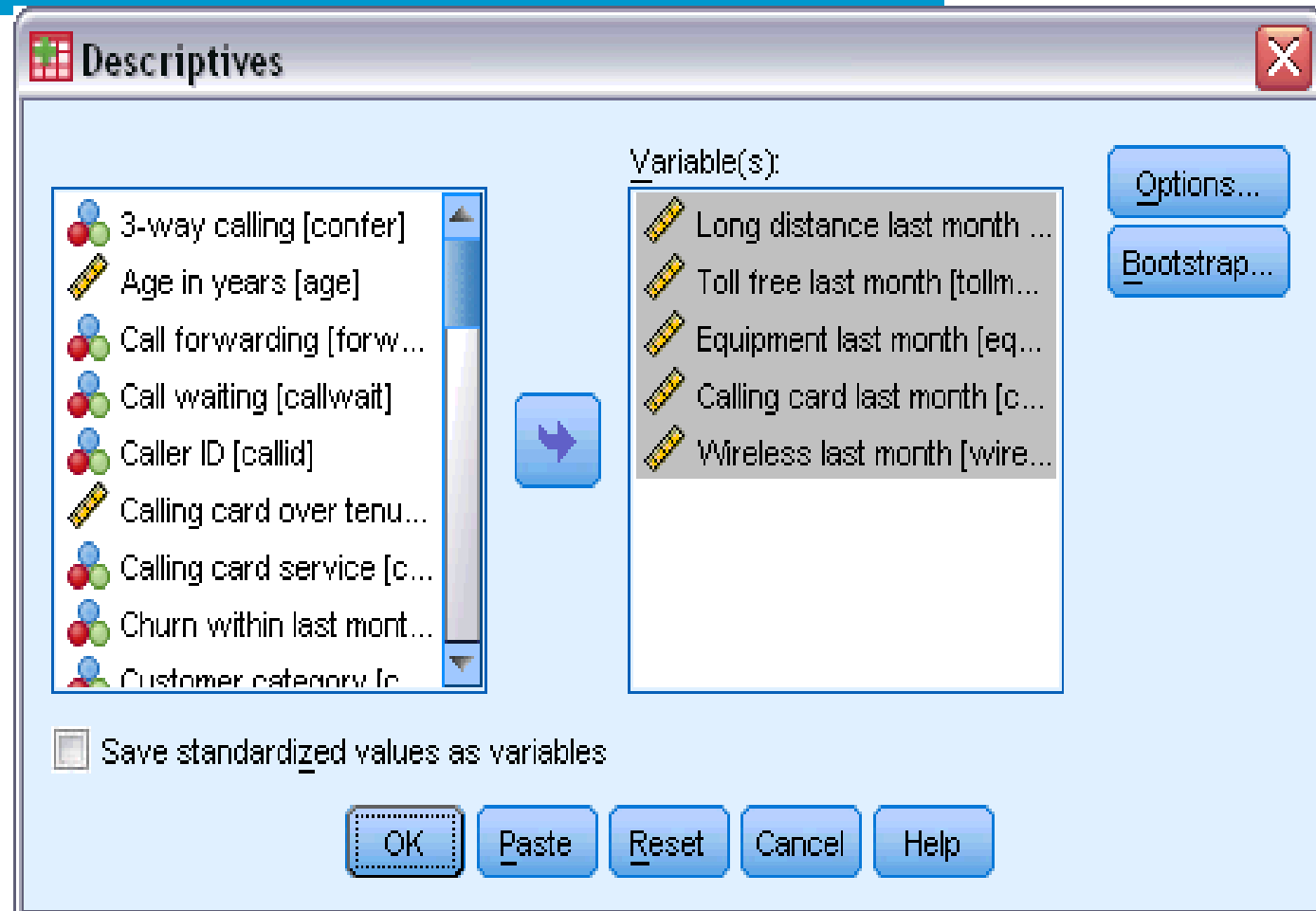
- ❑ The median is the middle value among a set of values.

- **Standard deviation**

- ❑ Standard deviation is a measure of the dispersion of a set of data from its mean; more spread-apart data has a higher deviation. Standard deviation is calculated as the square root of variance. In finance, standard deviation is applied to the annual rate of return of an investment to measure the investment's volatility.

Quantifying Data

- Drop variables into the variable(s) box
- Click options
- Chose appropriate tests
- Click Ok



Gratias

Many Thanks for Your Attention

