Basic Descriptive Analysis

Qualitative Variables

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Outline

1. Qualitative Variables:
    1. Declaring
    2. Labels management
2. Numerical tools:
    - Frequencies Distribution Table
3. Graphical Descriptive tools for qualitative variables
    2. Pie chart
    3. Bar chart
4. Color Management

Tools

1. Graphical

   Visualitze variable's distribution

2. Numerical

   Quantify what is observed in he graphs

1. Graphical tools

1. Performing the graph

   Mechanical (software)

2. Reading the graph

   Technical (statistitian or data miner)

3. Interpretation

   Conceptual (domain expert)

   Contextualization

Qualitative variables

1. Codify correctly!!!!!

2. Assign labels properly sorted

Frequencies Distribution Table

X: qualitative variable

s: number of modalities (categories, values)

$c_1 \ldots c_s$: values

Accumulated columns only for ordinal variables

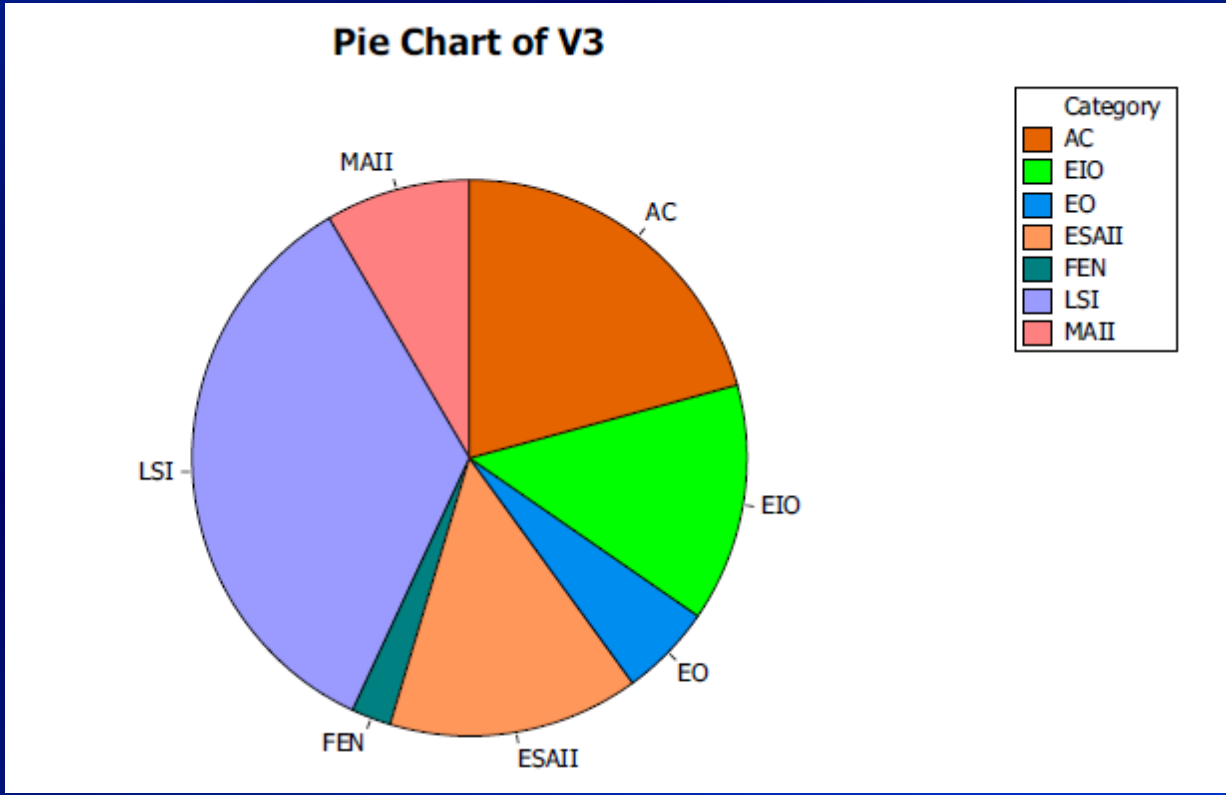
X	n_i	$\sum_{n_j}^{n_i}$	f_i	$\sum_{j=1}^{i} f_j$
c_1	n_1	n_1	$\frac{n_1}{n}$	$\frac{n_1}{n}$
c_2	n_2	$n_1 + n_2$	$\frac{n_2}{n}$	$\frac{n_1}{n} + \frac{n_2}{n}$
$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\vdots$
c_{s-1}	n_{s-1}	$n_1 + \ldots + n_{s-1}$	$\frac{n_{s-1}$	$\frac{n_1}{n} + \ldots + \frac{n_{s-1}}{n}$
c_s	n_s			1

Impact of missing in percentages

Graphical tools for qualitative variables

Pie chart

X	n_i
AC	27
EIO	18
$ESAII$	19
FEN	3
LSI	45
$MAII$	11
OE	7
	130



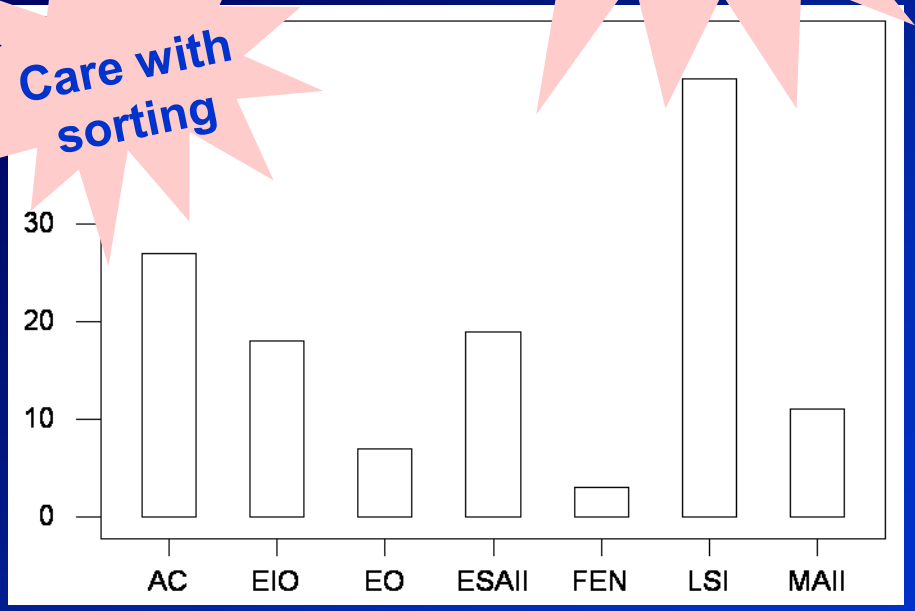
Graphical tools for qualitative variables

Bar chart (Bar Plot)

X	n_i
AC	27
EIO	18
$ESAII$	19
FEN	3
LSI	45
$MAII$	11
OE	7
	130

Care with sorting

Preferred for ordinal variables



READING PIES and BARPLOTS

1. Uniform distribution?

2. Central trend (Mode)

3. Dominant modalities?

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Are there any questions?...