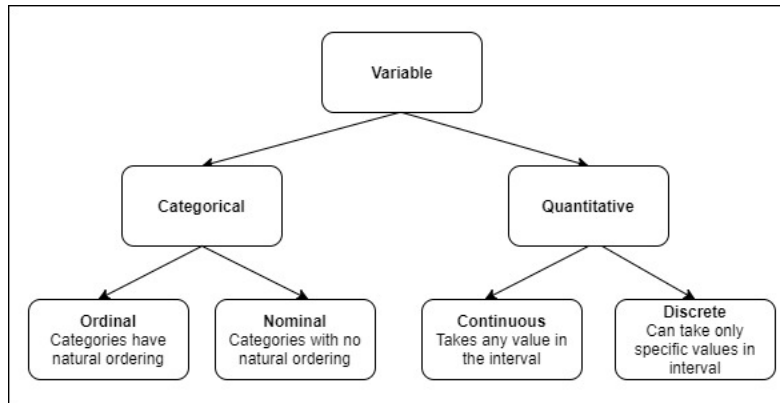


ILRST/STSCI 2100 Discussion 2: Introduction

Some terms from chapter 1:



Examples:

- Ordinal: Education level - category of education of a student has a natural order: high school < college < grad. school
- Nominal: Favorite brand of cereal
- Continuous: Height (170 cm makes sense, so does 170.5, 170.55, and 170.555)
- Discrete: Number of students in the class (can't have 16.5 students)

These distinctions are important because the kind of variable you have, determines what kind of analyses and graphs you can make.

For categorical data, only certain graphs make sense, and likewise for quantitative data.

When graphing in general, either by hand or on Minitab:

- Include title, and x-axis and y-axis titles
- Label the scale on axes
- Include units on axes
- Include legend/key if necessary

Categorical Data

Represented by a **bar chart**.

- x-axis is the category
- y-axis can be either frequency or relative frequency; $\text{relative frequency} = \frac{\text{Frequency}}{\text{Total Observations}}$
- Bars must have equal width
- A Pareto diagram includes the category of "other"

Quantitative Data

Dotplot

- Each dot is an observation
- Best for sample sizes smaller than 20 - 25

Histograms

Stem and leaf

Pie charts are not good for representing quantitative data.

Minitab Express:

You are expected to be able to generate bar chart, dotplot and draw a random sample in Minitab.

First, open Minitab Express. Load a dataset that already exists on your computer, in Minitab, click "File" > "Open Worksheet"

To make a bar chart, click "Graphs" > "Bar Chart".

For a dotplot, click "Graphs" > "Dotplot"

Note, for quantitative variables, there's a blue curve and for categorical, there are green squares. You can't put in a categorical variable for the dot plot.

Drawing a random sample: (1) Data > Generate Patterned Data > Numeric. Enter "1" to population size. (2) "Data" > "Sample from Columns" and select the column you just made