

Lecture 17: Chapter 5

Section 5C: Statistical Tables and Graphs

Definitions and Frequency Tables

Suppose someone gives you the total number of strokes 20 people took on a particular hole while golfing to be:

5 3 4 5 6 4 3 5 4 3 5 4 5 4 3 3 3 4 4 6

This data is hard to interpret as given; we need to organize it via a frequency table.

Score	Frequency	Cum. Frequency	Rel. Frequency
3	6	6	.3
4	7	13	.35
5	5	18	.25
6	2	20	.1

Definition 1. A basic **frequency table** has two columns

- i) The first column list all the **categories** of data
- ii) The second column lists the **frequency** of occurrence of each category.

We also may include columns for **relative frequency** and **cumulative frequency**

Data Types

There are two main types of data

Definition 2. Qualitative data describe qualities or nonnumerical categories.

Definition 3. Quantitative data represent counts or measurements.

Example 1. (Binning Data) Identify the type of data and make a complete frequency table for the following: You bowling scores for the season were

145 137 184 134 174 145 147 174 153 134 154 164 163 173 142

Graphs

All statistical graphs need at least the following four things.

- 1) Title/caption
- ii) Vertical scale and title
- iii) Horizontal scale and title
- iv) Legend

Example 2. Make a bar graph for the frequency of the following raw data.

Make a Pie chart for the relative frequency of the data.

The grades on the exam were

A B A C D B A D B C C C B D A B F D F B C

Histograms and Line Charts

Definition 4. A **histogram** is a bar graph for quantitative data categories.

Definition 5. A **line chart** shows the data value for each category as a dot, and the dots are connected with lines. For each dot, the horizontal position is the center of the bin it represents and the vertical position is the data value for the bin.

Example 3.