

EMPL4005

INFORMATION, DATA AND ANALYSIS

Organising and Presenting Data

Statistics

- The purpose of **descriptive statistics** is to summarise or display data so we can quickly obtain an overview.
- **Inferential statistics** allow us to make claims or form conclusions about a population based on a sample of data from that population.



Descriptive Statistics

- Descriptive statistics play an important role today because of the vast amount of data readily available at our fingertips.
- Descriptive Statistics enable us to accurately summarise data to obtain the “big picture” - either graphically or numerically.
- The most common descriptive statistic is the **average**



Inferential Statistics

- Cover a large variety of techniques that allow us to make actual claims about a population based on a sample of data.
- A **population** in statistics represents all possible measurements or outcomes.
- A **sample** refers to a portion of the population that is representative of the population from which it was selected.



Inferential Statistics

- Seventy-three percent of Asian American households in the United States own a computer.
- Households with children under the age of 18 are more likely to have access to the internet (62 percent) than households with no children (53 percent).
- It is not feasible (practical or possible) to survey all these people individually so a 'sample' must be used to obtain this information.



Descriptive Statistics

The Beatles released 12 albums between 1963 and 1969: this is descriptive as it is based on the entire population (all the albums released in that time frame).

The average A level grades for incoming students to Carmarthen Campus in 2011 was CCD: this is also based on the entire population - all incoming students to that campus in that time frame.



Once you have collected data, what do you do?

- Organise and present the data
- Summarise the information numerically



The use of tables

Remember that the objective of **tabulation** and the use of graphs and charts is to summarise information in such a way as to create a simplified and clear picture of the data.

Effective tabulation (conventions):

- Simplification
- Clear layout of figures into rows and columns
- Row and column headings
- A title for the complete table
- The UNITS of the figures (if any ambiguity)
- The source of the data
- The use of SUMMARY rows and columns



- An **ordered array** consists of an ordered sequence of the raw data in rank order from the smallest observation to the largest observation.



- A **Frequency table** is simply a table that organises numerical data values into intervals.
- A frequency table is a useful way to indicate how many units fall into different groupings.
- To make a frequency table, first determine the groupings, then count how many values fall in each group.

Frequency Table Example

based on possible answers to Moodle Demo Survey

Section 1 Navigation

Responses	1.1	1.2.1	1.2.2	1.2.3	1.2.4	1.2.5	1.2.6	1.3.1	1.3.2	1.3.3	Freq.
Excellent 5	2	4	3	4	2	2	4	1	2	0	23
Good 4	3	2	4	2	4	3	3	3	4	2	30
OK 3	4	3	2	3	4	4	1	4	3	3	31
Poor 2	1	2	2	2	1	1	2	2	1	4	18
Very Poor 1	1	0	0	0	0	1	1	1	1	2	7
Total Responses	11	11	11	11	11	11	11	11	11	11	



Creating a graph from the data

- Create a table of the responses and the frequency and add these into two columns in Excel.

Response	Frequency
Very Poor	7
Poor	18
OK	31
Good	30
Very Good	23

Response	Frequency
Very Poor	7
Poor	18
OK	31
Good	30
Excellent	23



A Column Chart of the Frequency

- Select the data in the two columns,
- Click on Insert: Charts: Column and choose a type of Column.

