

## DESCRIPTIVE STATISTICS

### 3.1 Classification of data

There are two types of data:

- 1) Qualitative data – this data is descriptive or categorical. E.g. red or blue, tall or short, overweight or underweight etc.
- 2) Quantitative data – this data is countable or measurable. This will largely be our focus for this topic.

#### **Quantitative data**

Quantitative data is either **discrete** (countable for example litter size, number of children etc. These are basically whole numbers.) or **continuous** (measurable for example height, weight, volume etc. These can have in-between values).

After you collect your data, it has to be summarized in a format that makes it easier to understand.

### 3.2 Summarizing data

Data can be summarized in the following ways:

- a) Graphical Summary
- b) Numerical Summary

#### **3.2.1 Graphical summary of discrete data**

You can summarize discrete data using the following:

1. Frequency tables
2. Cumulative frequency tables
3. Bar diagrams
4. Dot diagrams/ dot plots

Example 1. Twenty five litters are observed and the number of male piglets in a litter of 5 piglets are given as follows:

2, 3, 3, 2, 0, 3, 2, 3, 2, 1, 2, 3, 0, 5, 1, 4, 2, 4, 1, 3, 2, 2, 3, 4, 4.

Sampling frame: litter with 5 piglets.

Summarize the above discrete data graphically.

**Frequency and Cumulative frequency table:**

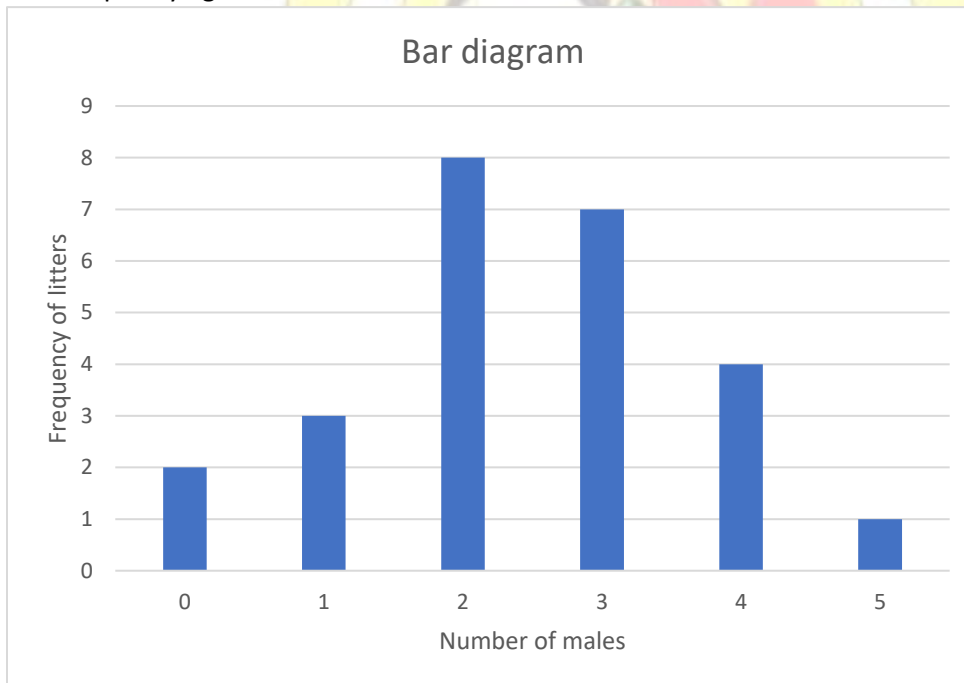
# male piglets in a litter of 5	0	1	2	3	4	5
Frequency	2	3	8	7	4	1
Cumulative frequency	2	(2+3) 5	(5+8) 13	(13+7) 20	(20+4) 24	(24+1) 25

*Example summary statement for frequency table above:* 2 and 3 males in a litter of 5 piglets is most common while 0 and 5 males in a litter of 5 piglets is least common.

*Example summary statement for cumulative frequency table above:* The cumulative frequency for any value (x) is the total frequency having values less than or equal to (x). An example from above is; 13 is the total frequency of litters having 2 or less male piglets in a litter of 5 piglets.

**Bar diagram**

Plot frequency against number of males.

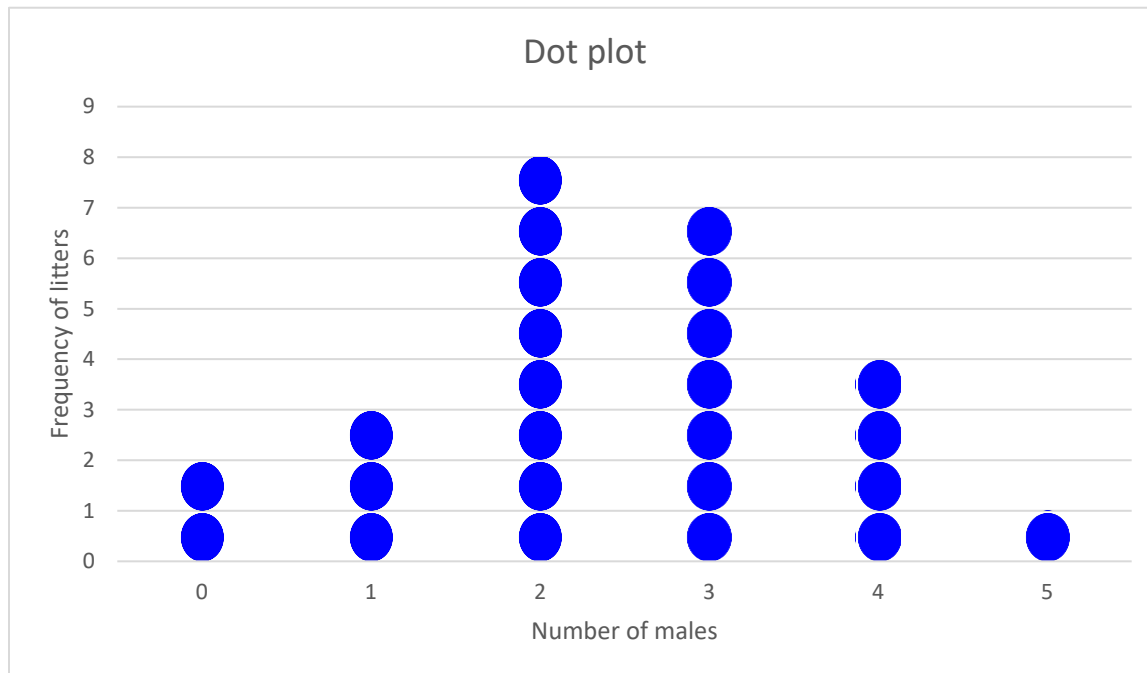


Summary: most frequent is 2 males / litter and least frequent is 5 males / litter.

### Dot plot

A dot plot distributes numerical values where each dot represents a value. If a value occurs more than once, the dots are placed one above the other so that the height of the column of dots represents the frequency of that value.

Plot frequency of litters against males



Summary: most frequent is 2 males / litter and least frequent is 5 males / litter.

Summarizing data in the above different ways is done for easy interpretation or extraction of data.

