**Topic 26**

**Graphical Displays of Association**

The final simple graphical display will be the scatterplot.

Let’s see how far we’ve come:

One dimensional

Categorical

**Bar Graph**

Quantitative

Few data points

**Dotplot**

**Stemplot**

Lots of data

**Histogram**

Two dimensional

One dimensional with categorical binary

Categorical

**Bar Graph with groups**

Quantitative

Few data points

**Side-by-side stemplot**

Lots of data

**Population histogram**

Categorical – Categorical

**2-way table**

**Proportional bar graph**

**Bar graph with groups (limited number of groups)**

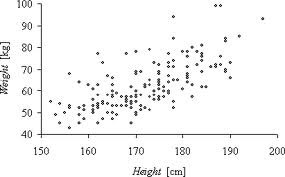
Categorical – Quantitative

**Stemplot**

**Stacked histograms**

Quantitative –Quantitative

**Scatterplot**



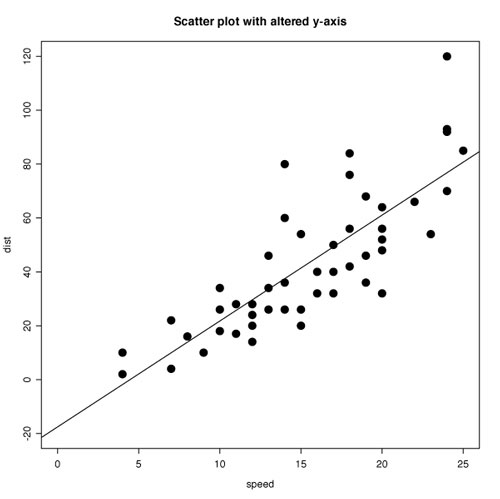
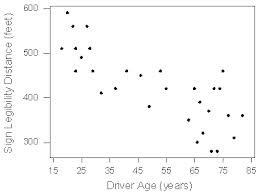
**Scatterplot**

* Two Quantitative (Continuous) Variables
* Explanatory Variable is on Horizontal Axis
* Response Variable is on Vertical Axis

Variables are **Associated** if one can be predicted (to some degree) from the other.

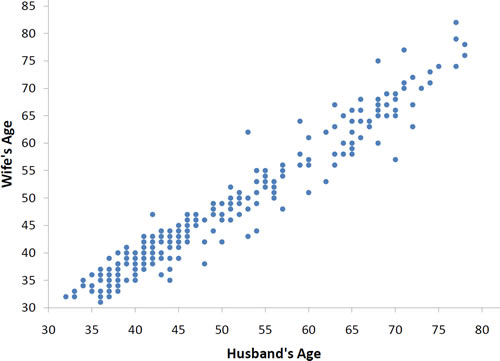
**Direction of Association**

* **Positive** – if they both move in the same direction (both up or both down)
* **Negative** – if they move in opposite directions (one up, the other down)

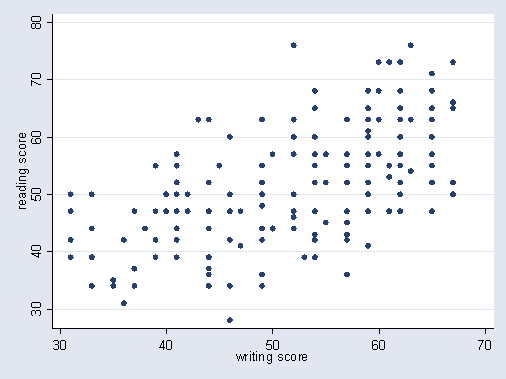
 

***Strength* of Association -** How accurately one value (e.g. response) can be predicted from the other value (e.g. explanatory.

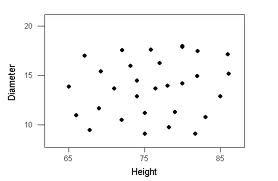
Strong



Weak



**Sometimes Not at All**



***Form* of Association**

* **Linear**
* **Curvilinear**

