

STAT 113

Scatterplots and Correlation

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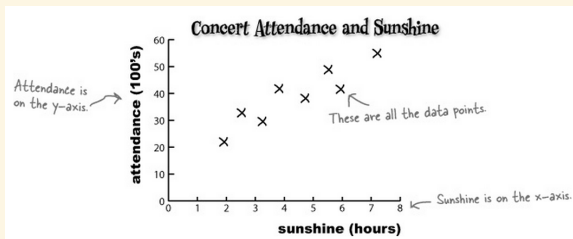
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The Scatterplot

- With two quantitative values *from the same source* (e.g. from the same person), we can represent each case (e.g., person) as a point in 2D space.
- If we plot all of these points, we obtain a **scatterplot**

Scatter Diagrams Show Patterns

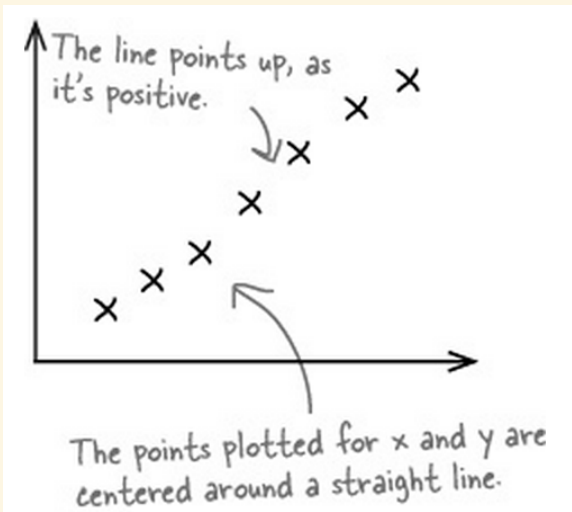


Do you see a pattern?

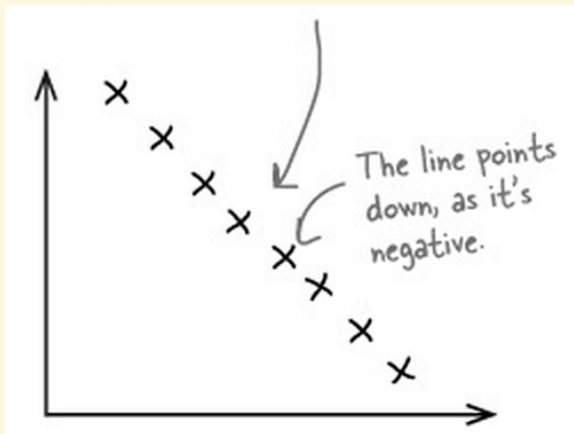
Correlation

- You can identify correlations on a scatter diagram by the distinct patterns they form.
- The variables are said to have a **linear association** if the scatter diagram shows the points clustered around an approximately straight line.
- (Pearson's) **correlation coefficient** measures the strength and direction of this association.

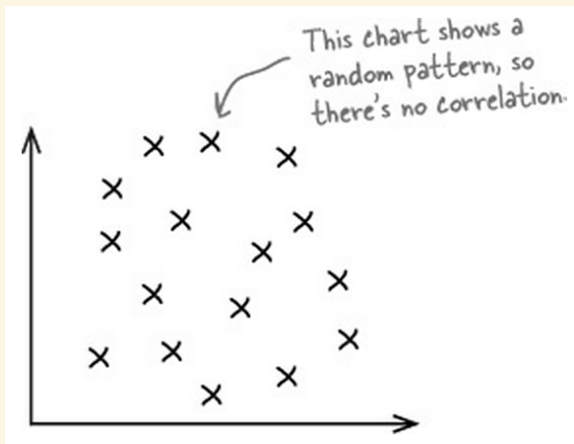
Positive Linear Association



Negative Linear Association



No Association



Estimating Relationships

Handout