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EDG500: Educational Research and Statistics

Week 7 Video 12

1. If it were true that two identical twins always had the same height, what would the scatterplot of the heights of several pairs of identical twins look like? What would be the correlation r between the heights?

If two identical twins always had the same height, the scatterplot of the heights of several pairs of identical twins would exemplify a positive straight regression line, because the taller one is of a pair, the taller the other will also be. The correlation would be 1.0, a perfect correlation.

2. What are all the possible values of the correlation coefficient r ?

The possible values of the correlation coefficient r will always be between 1 and -1.

3. If heredity plays a strong role in determining personality, will the correlation between twins raised together be about the same as, or much larger than, the correlation between twins raised apart?

If heredity plays a strong role in determining personality, the correlation between twins raised together will be much larger than the correlation of twins raised apart. The correlation will have a positive influence from both genetics and environment, contributing to the increased positive correlation value.

4. Is it easy to guess how large the correlation is by looking at a scatterplot? Explain.

At a glance, one can easily guess what a correlation might be from looking at the scatterplot, especially if set up well. There is a recognizable trend through which one can readily draw a line to assess the differences and similarities in relation to the imaginary line. A linear regression line can be achieved through linear regression analysis to determine the correlation or relationship between the variables. Confirmation is made with the correlation formula for r . A direct relationship is indicated with a positive slope.

