

What are some examples of correlation in real life?

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Correlation refers to a relationship between two or more variables, where a change in one variable is associated with a change in another variable. In real life, correlation can be observed in various scenarios. One example is the relationship between exercise and weight loss. As a person increases their level of physical activity, their weight tends to decrease. This shows a positive correlation between exercise and weight loss. Similarly, there is a negative correlation between smoking and lung health. The more a person smokes, the higher their risk of developing lung diseases. Other examples of correlation in real life include the relationship between education and income, the link between sleep and academic performance, and the connection between stress and health. Understanding correlation can help us better understand and predict behaviors and outcomes in various aspects of life.

6 Examples of Correlation in Real Life

In statistics, correlation is a measure of the linear relationship between two variables.

The value for a correlation coefficient is always between -1 and 1 where:

**-1 indicates a perfectly negative linear correlation between two variables
0 indicates no linear correlation between two variables
1 indicates a perfectly positive linear correlation between two variables**

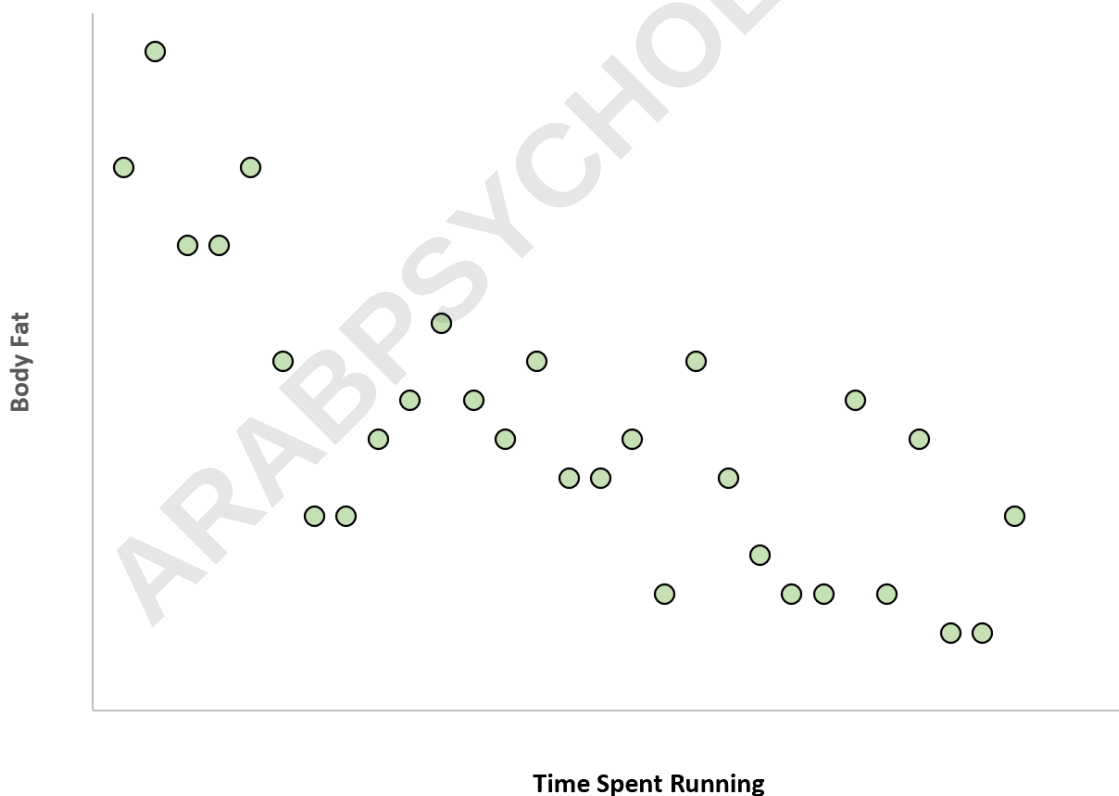
The following examples illustrate real-life scenarios of negative, positive, and no correlation between variables.

Negative Correlation Examples

Example 1: Time Spent Running vs. Body Fat

The more time an individual spends running, the lower their body fat tends to be. In other words, the variable running time and the variable body fat have a negative correlation. As time spent running increases, body fat decreases.

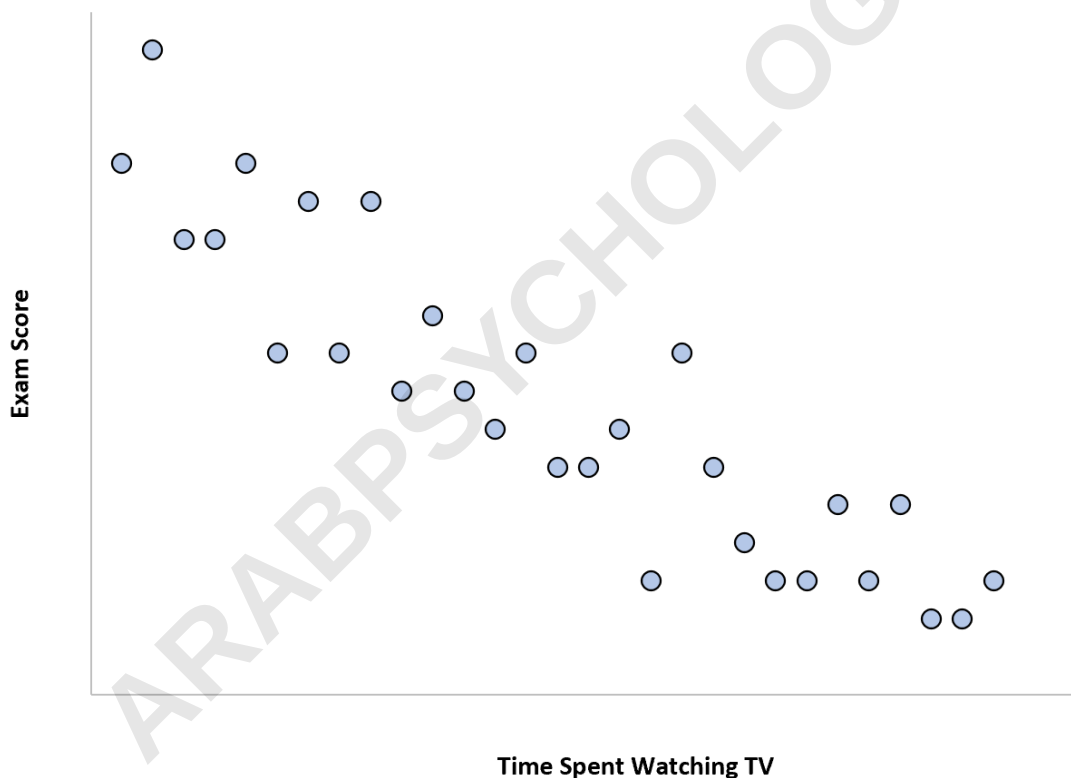
If we created a scatterplot of time spent running vs. body fat, it may look something like this:



Example 2: Time Spent Watching TV vs. Exam Scores

The more time a student spends watching TV, the lower their exam scores tend to be. In other words, the variable time spent watching TV and the variable exam score have a negative correlation. As time spent watching TV increases, exam scores decrease.

If we created a scatterplot of time spent watching TV vs. exam scores, it may look something like this:

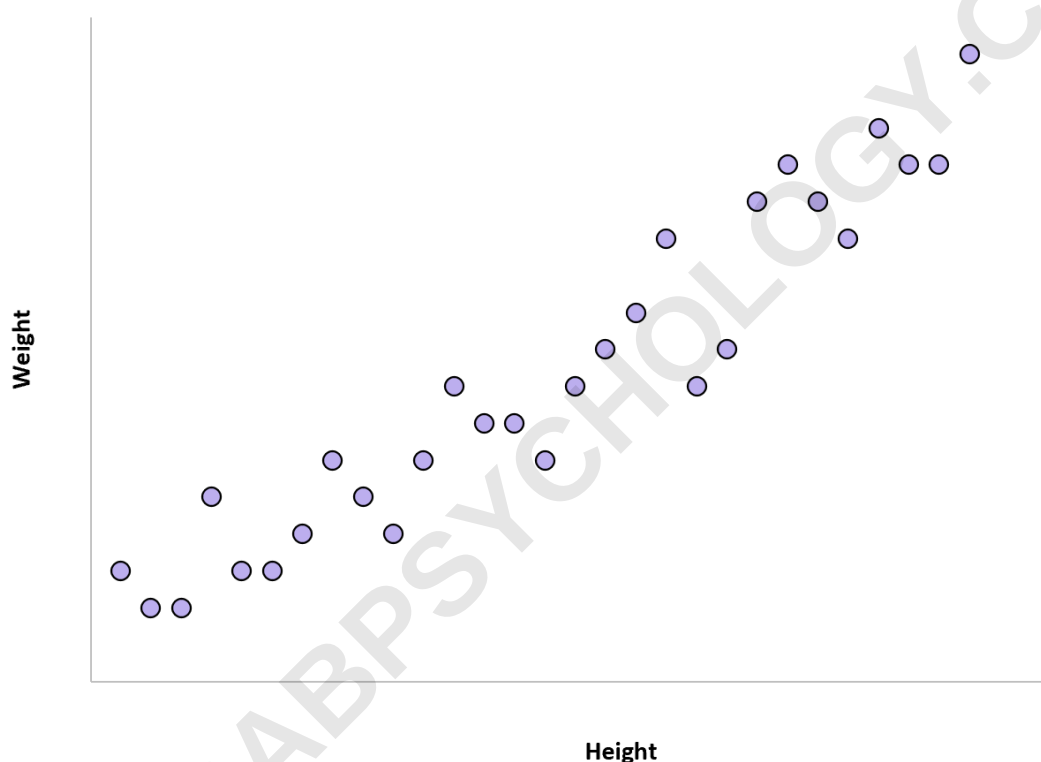


Positive Correlation Examples

Example 1: Height vs. Weight

The correlation between the height of an individual and their weight tends to be positive. In other words, individuals who are taller also tend to weigh more.

If we created a scatterplot of height vs. weight, it may look something like this:

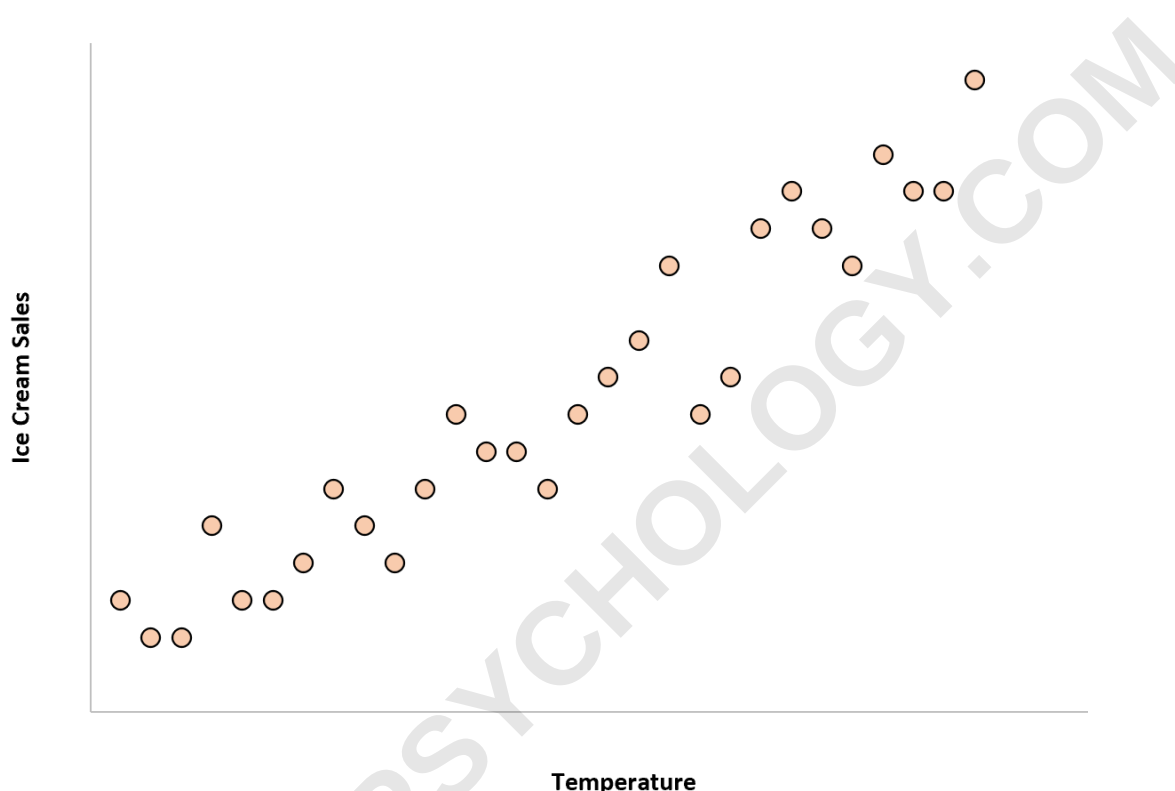


Example 2: Temperature vs. Ice Cream Sales

The correlation between the temperature and total ice cream sales is positive. In other words, when it's hotter outside the total ice cream sales of companies tends to be higher since more people buy ice cream when it's

hot out.

If we created a scatterplot of temperature vs. ice cream sales, it may look something like this:



No Correlation Examples

Example 1: Coffee Consumption vs. Intelligence

The amount of coffee that individuals consume and their IQ level has a correlation of zero. In other words, knowing how much coffee an individual drinks doesn't give us an idea of what their IQ level might be.

If we created a scatterplot of daily coffee consumption vs. IQ level, it may look something like this:



Example 2: Shoe Size vs. Movies Watched

The shoe size of individuals and the number of movies they watch per year has a correlation of zero. In other words, knowing the shoe size of an individual doesn't give us an idea of how many movies they watch per year.

If we created a scatterplot of shoe size vs. number of movies watched, it may look like this:

