U3D9_T 3.5 Analysis and Conclusions

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U3D9_T
3.5 Analy...

U3D9 MAP 4CI 3.5 Analysis and Conclusions

Cause and Effect Relationship **is a relation where a change in the independent variable has a predictable effect on the dependent variable.**

E.g. More advertising resulting in greater sales volume.

1. For each independent variable, identify a dependent variable that might form a cause and effect relationship.

a) The amount of time students study for an exam.

- The greater the study hours

  the better the exam result.

b) The cost of gasoline sold.

- The greater the gasoline cost

  the fewer litres sold.

c) The amount of space used to display a product in a store.

- Greater display space

  results in greater sales of the product

d) The amount of time a person exercises per week.

- The greater the amount of exercise

  the better the fitness level.

e) The average number of cars driven in a city per day.

- The greater the number of cars driven

  the greater the
  - smog levels
  - time to reach destination
  - number of traffic jams

HOMEWORK: Pg 186 # 1 – 4 Use: desmos.com/calculator for # 5, 6

Regression Analysis **is analysing the how well the line of best fit represents the data. Regression analysis involves calculating the correlation coefficient and using that to determine how effectively the line of best fit represents the data.**

Errors in Analysis occur when:

1. There is too little data.
2. Using linear regression (line of best fit) for a non-linear relation.
3. Using linear regression (line of best fit) when the correlation is weak.
4. Reversing the cause and effect relationship.
5. Extrapolating outside the range of the data set.
6. Not considering the effects of outliers or influential points.

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A high correlation for a data set does not always indicate a cause and effect relationship between two variables. Often, more data and analysis are needed to prove such a relationship exists.

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