
Tools

Scatter Diagram

Measuring Relationships Between Variables

Background

A scatter diagram is a tool used to study and identify the possible relationship between the changes observed in two different sets of variables. In addition to the relationship, the tool provides a picture of the outliers--those that defy the expected relationship. Often there is much to be learned from the study of outliers.

When to Use

- When causes need to be analyzed
- When hunches need to be tested

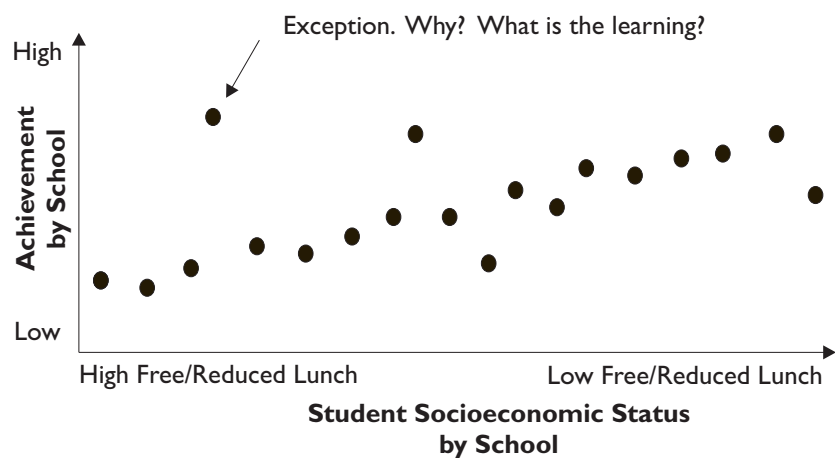
How to Use

1. Identify two factors. They can be (A) a quality characteristic and a factor that affects it, (B) two related quality characteristics, or (C) two factors suspected of relating to the same quality characteristic.
2. Draw and label the horizontal and vertical axes.
3. Draw the scale for each axis.
4. Plot the data points.
5. Look for patterns. What can be learned from the pattern?
6. Look for outliers. What can be learned from the outliers?

Hints

A scatter diagram can be constructed if a relationship is **believed** to exist between two system factors. The scatter diagram is used to analyze causes and identify patterns. Exceptions to the pattern may offer your greatest opportunity for new learning.

How Does It Look



Next Steps

Look for patterns, peaks or troughs, and outliers. To become more skilled at interpreting scatter diagrams, refer to tool books. A web search provides some assistance.

