

Practice: Analyze the Area Measurement MSA Data

In a previous practice, you measured the area of several objects. In fact, several other inspectors measured these same objects in random order. In this practice, you analyze these data using variance components.

1. Open your saved **Area MSA Exercise *Name* Combined.jmp** file (where ***Name*** is your name). This table should have 96 rows.

Note: If you did not save this file, or if you cannot locate the file, you can analyze the MSA without your data. These data are stored in the file **Area MSA Exercise Combined.jmp**.

2. To analyze these data, select **Measurement Systems Analysis** from the **Analyze** menu under **Quality and Process**. Then enter **Measured Value** for **Y, Response**, **Inspector** for **X, Grouping** variable, and **Part Number** for **Part, Sample ID**. For **MSA Method**, use **EMP**.
 3. Under the top red triangle in the Analysis window, select **Variance Components**.
 - a. Which component of variation is the largest?
 - b. The three components of variation attributed to the measurement system are **Inspector**, **Inspector*Part Number**, and **Within**. Which of these three components is the largest?
 - c. What does the **Within** variation represent?
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- a. **Part Number** has the largest variance component, which is good.
 - b. The **Within** component is the largest.
 - c. The **Within** component represents repeatability variation. This means that each person does not get the same reading on repeated measurements on the same part.

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