

Chapter 25: A Perspective on Statistics in Organizations

Organizational Structure

Deming's Process Diagram

Organizational Structure

Statistical Tools in Problem Formulation

Chap. 25 - page 1

Chap. 25 - page 2

Statistical Tools in Problem Formulation

- Flow Diagrams
- Operational Definitions
- Conformance Analysis
- Cause-and-Effect Analysis
- Checksheets
- Pareto Analysis

Chap. 25 - page 3

Flow Diagrams

A **flow diagram** shows the steps in a process in a graphical display.

A thorough flow chart makes sure that no steps are left out.

When data are collected at a particular step, the flow chart helps to put the data into context and makes it easier to see why the data are needed and how they are to be used.

Rectangular boxes stand for an action. Triangular boxes stand for making a decision.

Examples:

Chap. 25 - page 4

Operational Definitions

The **operational definition** answers who, what, when, where, why, and how.

Conformance Analysis

Conformance Analysis is the analysis of data to determine whether standards for a process are met.

Chap. 25 - page 5

Checksheets

A convenient method for recording the data.

Could be on paper, on a laptop computer, or ...

Should be setup to minimize recording mistakes.

Chap. 25 - page 7

Cause-and-Effect Analysis

Keep asking "Why?"

(or Ask why **five** times!)

Organized brainstorming!

Cause-and Effect Diagram

(also known as CE-Diagram, Ishikawa Diagram, and Fishbone Diagram)

Examples:

Chap. 25 - page 6

Pareto Analysis

Cause and effect analysis usually lists a large number of *potential* causes.

The **Pareto Principle** states that usually only a small number of the causes are responsible for most of the variation in process results.

Pareto analysis, in particular the Pareto Diagram, helps us separate the "**vital few from the trivial many.**"

Examples:

Chap. 25 - page 8