

Randomized Complete Block Designs in Industrial Studies

Doug Sanders

Six Sigma Associates

Mary Leitnaker, Robert McLean

University of Tennessee

Key Words: Analytical Studies; Randomized Complete Block Designs.

Abstract

This paper examines a philosophical motivation and methodology for using randomized complete block designs as a proactive method for collecting data to develop further understanding of those sources of variation affecting process outputs. The traditional purpose of the randomized block design is to remove the effects which distinguish blocks in order to make the presence of other effects more apparent. Blocking can also be used to determine whether the effects noted in an initial experiment are repeatable across blocks, or are influenced by other factors which change from block to block. Examples are given to illustrate these points.