



Review Article

**A COMPARATIVE STUDY BETWEEN ONE-FACTOR-AT-A-TIME
AND DESIGNED EXPERIMENTS**

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Received: 24 July 2013,

Revised and Accepted: 31 July 2013

ABSTRACT

Many engineers and scientists perform one-factor-at-a-time (OFAT) experiments. They will continue to do so until they understand the advantages of designed experiments over OFAT experiments, and until they learn to recognize OFAT experiments so they can avoid them. A very effective way to illustrate the advantages of designed experiments, and to show ways in which OFAT experiments present them-selves in real life, is to introduce real examples of OFAT experiments and then demonstrate why a designed experiment would have been better. Three engineering examples of OFAT experiments are presented, as well as designed experiments that would have been better. The three examples have been successfully used in an industrial workshop and can also be used in academic courses.

KEY-WORDS: *Teaching statistics, One-factor-at-a- time (OFAT), Design experiment.*