

Abstract:

With reference to a confounded asymmetrical design for an $s_1 \times s_2 \times \dots \times s_w$ factorial experiment, a very powerful tool for expressing factorial arrangements in a compact and convenient form has been given and also used in this paper in order to derive efficiency factors of the said designs. The concept of orthogonal factorial structure and balance has been explained and a characterization for balance with orthogonal factorial structure has been given. An expression is derived for efficiency factors of linear contrasts. This expression involves Kronecker product matrices. An example is also given to show how efficiency factors of confounded asymmetrical factorial designs are calculated.