Package 'TrtCombo.FactorialExp.SR'

July 22, 2025

Type Package

Title Generation of Treatment Combination (in Standard Order) in 2^n
Factorial Experiment

Version 4.0.4

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Description Gives the required 2^n treatment combinations in a 2^n symmetric factorial experiment in their respective standard order.

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Encoding UTF-8

RoxygenNote 7.1.1

NeedsCompilation no

Repository CRAN

Date/Publication 2021-05-03 07:20:05 UTC

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trtcombo.std.order	*A Function to generate the 2^n treatment combinations in their standard order, for a symmetric 2^n factorial experiment.*

Description

The function basically utilizes a very basic algorithm, for listing down all possible treatment combinations in a 2^n experiment, where stating the treatment combinations for large values of n, say n = 8, i.e., a 2^8 experiment, could be quite a task, as there are a total of 2^8 = 256 treatment combinations to be listed, starting from 1,a,b,ab,......,abcdefgh.

Hence, the function eases the task of listing down all the possible treatment combinations, in a specific standard order, irrespective of the magnitude of 'n'.

For example - Suppose we consider a 2^4 factorial experiment. The total number of treatment combinations are 2^4 = 16. Implementing the function would list down all possible treatment combinations in a standard order as follows, '1','a','b','ab','c','ac','bc','abc','d','ad','bd','abd','cd','acd','bcd','abcd'.

Therefore, the algorithm of listing down the Treatment Combinations in a 2^n Factorial Experiment, in the standard order is as follows,

Step 1 :: Start with the control group labeled as '1', where all factors considered in the design are at a lower level.

Step 2 :: Select a new alphabet (denoting the respective factors) in lexicographic order, multiplying (concatenating) it with the previous alphabets till the last in the list.

Step 3 :: Repeat Step 2 until all the alphabets, representing specific factors in the experiment, gets exhausted.

Usage

```
trtcombo.std.order(n)
```

Arguments

n   A numeric value - Denoting the number of factors involved in a 2^n factorial experiment.

Value

A character type vector comprising of all possible treatment combinations in a 2^n factorial experiment in their standard order.

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See Also

The generation of all possible treatment combinations in a specific standard order in the symmetric 2^n factorial experiment, is of great importance because it helps to record all the combinations without missing out on any of the combinations, especially when 'n', i.e., the number of factors involved in the experiment is quite large.

Listing down the treatment combinations in their standard order, gets utilized in the analysis of the factorial experiment under consideration, also this way of reporting and listing the treatment combinations facilitates during 'construction of Fractional Factorial Experiment', 'Confounding of treatment effects in a factorial experiment', etc.

Examples

```
# For a 2^2 factorial experiment, we will obtain all the 4 possible treatment combinations,
# in their standard order as , '1','a','b' and 'ab'. Running the following line of code
# would give the desired result.

trtcombo.std.order(2)

# Similarly, for a 2^5 experiment, we will obtain all the 32 possible
# treatment combinations, in their standard order, by running the following line of code,

trtcombo.std.order(5)
```

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