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A RAPID WAY OF CALCULATING CHI-SQUARE (χ^2) TEST STATISTICS FOR A ($2 \times m$) CONTINGENCY TABLE

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Abstract

An alternate expression has been developed for the calculation of Chi-Square (χ^2) test-Statistic for a $2 \times m$ contingency table by avoiding the expected frequencies, of the individual cells.

Method

Suppose there are N subjects, each of wich is classified into one of two rows by attribute A, and into one of m columns by attribute B. Therefore, the $2 \times m$ contingency table of the data shall be of the form:

Attributes	B_1	B_2	.....	B_m	Total
A_1	x_1	x_2	.....	x_m	R_1
A_2	y_1	y_2	.....	y_m	R_2
Total	C_1	C_2	.....	C_m	N