

McNemar's Test for Paired Proportions

McNemar's Test) A group of 330 people were surveyed regarding approval of the President's performance at the beginning of his term and two years later. 130 approved at the beginning and 230 approved two years later. Is there evidence to conclude that the President's approval rating has increased at the 5% significance level?

$$\begin{array}{c|cc} & + & - \\ \hline \text{Before} & a & b \\ \hline \text{After} & c & d \end{array} \quad TS: \frac{(b - c)^2}{b + c} \quad CV: \chi^2_{n-1, \alpha}$$

	Approve	Disapprove
Before	130	200
After	230	100
TS:	2.093	
CV:	3.841	
n =	330	

McNemar's Test

		Factor X		
		Condition A	Condition B	Total:
Factor Y	Condition A	130	200	330
	Condition B	230	100	330
Total:		360	300	660

Significance level: 0.05

Using the continuity correction:

Test Statistic, Chi Sq: 1.956

Critical Chi Sq: 3.841

P-Value: 0.162

Fail to reject the null hypothesis of equal proportions

Uncorrected Test Statistic, Chi Sq: 2.093