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* KHOONG WEI HAO ST2137 Tutorial 5 T03;

* Q1;
proc format;
  value $candid "A" = "Candidate A" "B" = "Candidate B";
data t5q1;
  input gender $ before $ after $ count;
  label before = "Preference before TV debate"
        after = "Preference after TV debate";
  format before $candid.
        after $candid.;
datalines;
M A A 67
M A B 28
M B A 46
M B B 54
F A A 58
F A B 42
F B A 37
F B B 61
;
proc sort data=t5q1;
  by gender;
run;

proc freq data=t5q1;
  by gender;
  tables before*after/agree;
  weight count;
  title "Chi-square test for the related samples";
run;

* Ans: For Males:
H_0: Debate was not effective in changing male viewers' preference.
McNemar's test: Observed Chi-square = 4.38 > Chi-square_0.05(1) = 3.84 or p-value = 0.0364.
Reject H_0.;

* Ans: For Females:
H_0: Debate was not effective in changing female viewers' preference.
McNemar's test: Observed Chi-square = 0.317 > Chi-square_0.05(1) = 3.84 or p-value = 0.5737.
Do not reject H_0
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