

T-Tests

The Independent Sample T-Test compares the mean scores of two groups on a given variable. In this example, we compare “frequency of sex” for males versus females.

Null Hypothesis: The means of the two groups (males and females) are not significantly different.

Alternate Hypothesis: The means of the two groups (males and females) are significantly different.

T-TEST

GROUPS = Male(0 1)
/MISSING = ANALYSIS
/VARIABLES = sexfreq
/CRITERIA = CI(.95) .

Group Statistics

RESPONDENT'S SEX		N	Mean	Std. Deviation	Std. Error Mean
FREQUENCY OF SEX DURING LAST YEAR	MALE	976	3.10	1.912	.061
	FEMALE	1175	2.60	2.067	.060

We can see here that males report higher frequencies of sex than females. However, we cannot tell from here whether or not this difference is significant.

Levene's Test tells us if we have met the assumption that the two groups have approximately equal variances on the dependent variable. If Levene's Test is significant ("Sig." is less than .05), the two variances are significantly different. If Levene's Test is not significant, then the two variances are approximately equal, and the assumption is met. In this case, Levene's Test is significant.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
FREQUENCY OF SEX DURING LAST YEAR	Equal variances assumed	31.470	.000	5.800	2149	.000	.50	.087	.332	.672
	Equal variances not assumed			5.842	2124.146	.000	.50	.086	.333	.670

If Levene's Test was significant (variances are different), then read the bottom line. If Levene's Test is not significant (variances are equal), then read the top line. In this example, we read the bottom line. Our "t" value is 5.842, with 2124 degrees of freedom. There is a significant difference between the two groups. We can conclude, then, that males and females significantly differ in their reports of sexual frequency: males reported higher levels of sexual frequency than did females. The circled value indicates the difference in means (male score minus female score).