

Example

2016 ANES Pilot Study

Variables: info_educ & score_scientists

info_educ	Highest level of education achieved (1 = no high school diploma; 2 = high school diploma; 3 = some college; 4 = Associate's degree; 5 = Bachelor's degree; 6 = Postgraduate degree)
score_scientists	The thermometer score about how the respondent feels about the scientists (0 (cold) to 100 (warm))

Hypothesis: There is a difference in education levels on how people feel about scientists.

1. What is the independent variable? **Info_educ**
2. What is the level of measurement for the independent variable? **Ordinal**
3. What is the dependent variable? **Score_scientists**
4. What is the level of measurement for the dependent variable? **Interval-ratio**
5. Discuss a possible causal mechanism for this hypothesis. **As people become more educated, they learn more about the proper role of scientists and academic research, giving them a better sense and means of respecting the work that they do.**
6. State the null hypothesis. **There is no difference in how educated people are and their feelings about scientists**
7. For both your independent and dependent variables, calculate and then write about your descriptive statistics. You should use the appropriate measure of central tendency and variability. **My independent variable, info_educ, is an ordinal variable. Thus I will report the mode, which is 2 (or high school diploma). The range is 5. My dependent variable, score_scientists, is an interval-ratio variable, thus I will either report the mean or median. Since there are no outliers in this variable, mean is more appropriate. The mean is 72.81. The standard deviation is 23.99 and the range is 100.**
8. What is the appropriate test statistic you should calculate for this hypothesis?
One-way ANOVAs
9. What is the value of that test statistic? **7.554**
10. What is this test's significance value? **.000**
11. How do you interpret this significance value in evaluating the hypothesis? **There is a 0% probability that the difference levels of education is due to random chance. Our relationship is significant.**

Hypothesis: There is a difference amongst how people feel about crime spending on their feelings about the police.

1. What is the independent concept? (variable: crime_spending)
2. What is the dependent concept? (variable: score_police)
3. What is the null hypothesis? (Answer: There is no relationship between crime spending and feelings about police)
4. What test statistic would you use? (Answer: ANOVA)
5. What is the F-statistic? (Answer: 10.904)
6. What is the level of significance? (Answer: .000)
7. Do you accept the hypothesis? Do you confirm the null hypothesis? (Answer: Confirm the hypothesis, reject the null)