

Christina Castro

EDG 500

Video Wk. 12

Video 13 Two-Way Tables

1. Give two (or more) examples of categorical variables.

Two examples are gender and race.

2. What did Somerville include in its 2011 census that was unconventional?

The unconventional questions added to its 2011 census were: How happy do you feel right now? How satisfied are you with your life in general? Taking everything into account, how satisfied are you with Somerville as a place to live?

3. In the two-way table used to organize the responses to rating personal happiness and Somerville's physical beauty, which variable was the row variable and which was the column variable? Explain.

The row variable was happiness and physical beauty was the column variable.

4. As the level of happiness went up (from Unhappy to So-so to Happy), what happened to the percent of respondents who rated Somerville's physical beauty as Bad?

As the level of happiness increased the percent of respondents who rated Somerville's physical beauty as bad decreased.

Video 29 Chi Square

1. What type of research is the host of this series, Dr. Pardis Sabeti, involved in?

The non-stop evolutionary arms race between our bodies and the infectious microorganisms that try to invade and inhabit them.

2. Dr. Sabeti's work is modeled off of work done on malaria. What genetic mutation is an important source of resistance to malaria?

The genetic mutation that is an important source of resistance to malaria is sickle cell anemia.

3. What were the null and alternative hypotheses for testing whether the sickle cell gene protects against malaria?

The null hypothesis is that there is no association between Malaria and HbS. The alternative hypothesis is that there is in fact an association between Malaria and HbS.

4. What is the rule for calculating the expected counts under the null hypothesis?

Calculating the expected counts under the null hypothesis would be possible if the variables are truly independent as the null hypothesis states. The expected count is equal to the row total multiplied by the column total divided by the grand total.

5. The p-value of the chi-square test statistic turned out to be approximately 0. What can you conclude based on this p-value?

It shows that there is a relationship between our variables and we can reject the null hypothesis. This gives support to our research hypothesis.