Lab 10: Austin City Limits

Known as the “Live Music Capital of the World,” Austin, Texas is also home to the longest-running music series in American television history, *Austin City Limits*. This dataset includes data on a sample of musicians that performed live on the PBS television series *Austin City Limits* over the last 10 years. Data on each artist include measures of commercial popularity, such as the number of social media followers on Twitter or Facebook, and their success in winning a Grammy Music Award.

Help

Primary Research Questions

1. Are there an equal number of male and female performers on Austin City Limits?
2. Are male performers just as likely to have had a Top 10 hit as female performers?

(3 points possible)

Check the Data

Let's begin by examining our data in R.

1. Open RStudio. Make sure you've installed the SDSFoundations package.
2. Type **`library(SDSFoundations)`** This will automatically load the data for the labs.
3.Type **`acl <- AustinCityLimits`** This will assign the data to your Workspace.
4. Look at the spreadsheet view of the data to answer the following questions.

Alternatively, you can use follow the steps in the "Importing a Data Frame" R tutorial video, and use the AustinCityLimits.csv file. (Right-click and "Save As.") Make sure to **name** the dataframe "acl" when importing.

1. Open RStudio.
2. Click on "Import Dataset" button at the top of the workspace window. Choose *"from text file."*

3. Click on the location of the AustinCityLimits.csv file you just downloaded.
4. Click on the AustinCityLimits.csv file. Then, click Upload.
5. Look at the spreadsheet view of the data to answer the following questions.

1a. In what year did Allen Toussaint play at Austin City Limits?

Help

Answer: 2009

1b. How many years old was Allen Toussaint when he performed?

Answer: 75

1c. How many variables for Allen Toussaint have missing data?

Answer: 1

Hide Answer *You have used 0 of 2 submissions*

Help

(4 points possible)

Check the Variables of Interest

Let's find the variables we need to answer the question.

2a. Which variable tells us whether the performer is male or female?

The variable name in the dataset is [ ] Gender , which is a [ ] categorical variable.

2b. Which variable tells us whether the artist has had a Top 10 hit?

The variable name in the dataset is [ ] BB.wk.top10 ,which is a [ ] categorical variable.

Hide Answer *You have used 0 of 2 submissions*

(2 points possible)

Reflect on the Method

Which method should we be using for this analysis and why?

3a. We will use a Chi Square **Goodness of Fit** test to check whether there were an equal number of male and female performers. Why?

- We want to see if the distribution of a categorical variable matches a proposed distribution model. ✔
- We want to know if there is an association between two categorical variables.

Help

CORRECT. THE CHI-SQUARE TEST OF INDEPENDENCE ALLOWS US TO DETERMINE WHETHER 2 CATEGORICAL VARIABLES ARE INDEPENDENT OF ONE ANOTHER, WHILE THE CHI-SQUARE GOODNESS OF FIT TEST IS USED TO COMPARE THE DISTRIBUTION OF A SINGLE CATEGORICAL VARIABLE TO AN EXPECTED DISTRIBUTION FOR THAT VARIABLE.

3b. We will use a Chi Square **Test of Independence** to determine if male and female performers were equally likely to have had a Top 10 hit. Why?

- We want to determine if there is an association between two categorical variables. ✔
- We want to compare the distribution of a categorical variable to a proposed distribution model.

CORRECT. THE CHI-SQUARE TEST OF INDEPENDENCE ALLOWS US TO DETERMINE WHETHER 2 CATEGORICAL VARIABLES ARE INDEPENDENT OF ONE ANOTHER, WHILE THE CHI-SQUARE GOODNESS OF FIT TEST IS USED TO COMPARE THE DISTRIBUTION OF A SINGLE CATEGORICAL VARIABLE TO AN EXPECTED DISTRIBUTION FOR THAT VARIABLE.

Hide Answer *You have used 0 of 2 submissions*

Help

EdX offers interactive online classes and MOOCs from the world's best universities. Online courses from MITx, HarvardX, BerkeleyX, UTx and many other universities. Topics include biology, business, chemistry, computer science, economics, finance, electronics, engineering, food and nutrition, history, humanities, law, literature, math, medicine, music, philosophy, physics, science, statistics and more. EdX is a non-profit online initiative created by founding partners Harvard and MIT.

Terms of Service and Honor Code

Privacy Policy (Revised 10/22/2014)

About edX

About

News

Contact

FAQ

edX Blog

Donate to edX

Jobs at edX

Follow Us

Twitter

Facebook

Meetup

LinkedIn

Google+