



Bookmarks

- ▶ Important Pre-Course Survey
- ▶ Contact Us
- ▶ How To Navigate the Course
- ▶ Discussion Board
- ▶ Office Hours
- ▶ Week 0: Introduction to Data (Optional Review)
- ▶ Week 1: Sampling
- ▶ Week 2: Hypothesis Testing (One Group Means)
- ▶ Week 3: Hypothesis Testing (Two Group Means)
- ▼ **Week 4: Hypothesis Testing (Categorical Data)**

Readings

Week 4: Hypothesis Testing (Categorical Data) &gt; Lab &gt; Analyze the Data



Bookmark

Reflect on the Question

Analyze the Data

Draw Conclusions

## Primary Research Questions

1. Are each of the four musical genres equally represented on Austin City Limits?
2. Are some genres more likely to draw a large (100K+) Twitter following than others?

## Analysis

Let's break this question down into the different descriptive statistics that you will need to construct your answer. Be sure that your R output includes all of the following components.

### Goodness of Fit Test:


1. Create a table to show the counts of each genre.
2. Create a vector of expected proportions.
3. Check the expected counts assumption.
4. Run a chi square test.
5. Interpret the chi square statistic and p-value.

### Test of Independence:


1. Create a two-way table for genre and Twitter following.
2. Check the expected counts assumption.
3. Run a chi square test.
4. Interpret the chi square statistic and p-value.

(4/4 points)

## Goodness of Fit Test


Reading Check due  
May 03, 2016 at 17:00  
UTC 

### Lecture Videos


Comprehension Check  
due May 03, 2016 at  
17:00 UTC 

### R Tutorial Videos


### Pre-Lab

Pre-Lab due May 03,  
2016 at 17:00 UTC 

### Lab

Lab due May 03, 2016  
at 17:00 UTC 

### Problem Set

Problem Set due May  
03, 2016 at 17:00 UTC 

1a. What was the **expected count** of artists for each genre?



Answer: 29

1b. What was the **Chi-square** statistic? (round to 2 decimal places)



Answer: 70.41

1c. How many **degrees of freedom**?



Answer: 3

1d. What was the **p-value**?



Answer: less than 0.05

*You have used 1 of 1 submissions*

(7/7 points)

## Test of Independence

2a. Using the data from your two-way table, compute the proportion of artists in each genre with 100K+ Twitter followers. (Round to 3 decimal places).

Country?



Answer: 0.353

Jazz?



Answer: 0.182

Rock?



Answer: 0.441

Singer-Songwriter?



Answer: 0.625

2b. What was the **Chi-square** statistic? (round to 2 decimal places)

Answer: 5.69

2c. How many **degrees of freedom**?

Answer: 3


2d. What was the **p-value**?

Answer: greater than 0.05

*You have used 1 of 1 submissions*

(2/2 points)

## Conclusions

3a. We should   Answer: reject the hypothesis that each genre is equally represented at ACL Live.

3b. We should   **Answer:** fail to reject the hypothesis that genre is independent of Twitter followers.

*You have used 1 of 1 submissions*

© All Rights Reserved



© edX Inc. All rights reserved except where noted. EdX, Open edX and the edX and Open EdX logos are registered trademarks or trademarks of edX Inc.

