edX   UTAustinX: UT.7.20x Foundations of Data Analysis - Part 2

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▾ **Week 4: Hypothesis Testing (Categorical Data)**

Readings

Question 1

You want to know if the proportion of female performers on Austin City Limits Live has changed in the past two years.

> 1. Create a new variable in the dataset called "Recent" that is equal to a 1 for rows from years 2012 or 2013 and is equal to 0 for all other rows.
>
> 2. Make a table that shows the number of male and female performers in "recent" and non-recent years.
>
> 3. Use this data to answer the following questions.

*Use the "AustinCityLimits.csv" dataset to answer the following questions. Instructions for installing "AustinCityLimits.csv" can be found under the **Examine the Data** unit in this week's **Pre-Lab** section.*

You'll need to use the following code to help:

```
acl$Recent[acl$Year < 2012] <- 0
acl$Recent[acl$Year >= 2012] <- 1
```

(1/1 point)

1a. How many **female** performers have been on the show in the past two years (2012 and 2013)?

12 ✓

Answer: 12

12

You have used 1 of 1 submissions

(1 point possible)

1b. What is the appropriate method to test if representation by female performers is different before 2012 compared to since 2012?

◉   Chi-Square Goodness of Fit   ✖

◯   Chi-Square Test of Independence   ✔

◯   t-test for Independent Samples

◯   t-test for Dependent Samples

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(1/1 point)

1c. Report expected counts for the following performer groups.

Females **before 2012**

26.55 ▾   ✔   **Answer:** 26.55

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(1/1 point)

Females **in 2012 and 2013**

8.45 ▾   ✔   **Answer:** 8.45

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(1/1 point)
Males **before 2012**

61.45 ▾   ✔   **Answer:** 61.45

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(1/1 point)
Males **in 2012 and 2013**

19.55 ▾   ✔   **Answer:** 19.55

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(1/1 point)
1d. What is the **Chi Square statistic**? *(Round to 2 decimal places.)*

2.82   ✔

Answer: 2.82

2.82

You have used 1 of 1 submissions

(1/1 point)
1e. What is the **p-value** for the test? *(Round to 2 decimal places.)*

0.09   ✔

Answer: 0.09

0.09

You have used 1 of 1 submissions

(1/1 point)
1f. What is the appropriate conclusion for this test, assuming α = 0.05?

◉   We fail to reject the null hypothesis; gender is independent of performance before or after 2012.   ✔

○   We reject the null hypothesis; gender is not independent of performance before or after 2012

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