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▶ Week 1: Introduction to Data

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▼ **Week 4: Bivariate Distributions (Categorical Data)**

Readings

Reading Check due Mar 15, 2016 at 18:00 UTC

Lecture Videos

Comprehension Check due Mar 15, 2016 at 18:00 UTC

Week 4: Bivariate Distributions (Categorical Data) > Lab > Analyze the Data



Bookmark

Reflect on the Question

Analyze the Data

Draw Conclusions

Primary Research Question

Among male artists, is there an association between winning a Grammy and the genre of music that he plays?

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.

1. Subset the data (males only).
2. Create a table to show the marginal distributions for Genre and Grammy.
3. Create a contingency table to show the conditional distribution for Genre and Grammy.
4. Make a bar chart to better visualize how many artists in each Genre received a Grammy.
5. Calculate $P(A)$: the probability of winning a Grammy.
6. Calculate $P(A | B)$: the probability of winning Grammy, given the artist's Genre.
7. Interpret what these probabilities tell us about the relationship between Genre and winning a Grammy.

(8/8 points)


Contingency Table

Note: All of the questions below deal with the data frame that contains *males* only.

1) How many male artists won a Grammy?

R Tutorial Videos


Pre-Lab

Pre-Lab due Mar 15,
2016 at 18:00 UTC 

Lab

Lab due Mar 15, 2016
at 18:00 UTC 

Problem Set

Problem Set due Mar
15, 2016 at 18:00 UTC 

► Week 5: Linear
Functions

✓ Answer: 35

2) How many male artists did not win a Grammy?

✓ Answer: 46

3) Which **genre** had the greatest number of Grammy wins?

✓ Answer: rock/indie/folk

4) What is the probability that a randomly selected artist was a **Grammy winner**? (Report as a proportion rounded to three decimal places)

✓ Answer: 0.432

5) To determine the probability of winning a Grammy if the artist was a **singer-songwriter**, you would divide _____ by _____. (Enter numerical values.)

✓ Answer: 2

✓ Answer: 7

6) To determine the probability that a randomly-selected Grammy winner was a singer-songwriter, you would divide _____ by _____. (Enter numerical values.)

✓ Answer: 2

✓ Answer: 35

You have used 1 of 1 submissions

(5/5 points)

Conditional Probabilities

What is the probability that a randomly selected male artist **from each of the following genres** won a Grammy? (Report as proportions rounded to three decimal places.)

7a. Country?

✓ Answer: .636

0.636

7b. Jazz?

✓ Answer: .571

0.571

7c. Rock/folk/indie?

✓ Answer: .393

0.393

7d. Singer-songwriter?

✓ Answer: .286

0.286

7e. Our **conclusion** should be that winning a Grammy _____ independent of Genre.

is not ▼

✓ Answer: is not

You have used 1 of 1 submissions

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