Multinomial Logistic Regression

Review & Practice

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STA 210

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Announcements

- Lab 09 due Tuesday at 11:59p

- Project Regression Analysis due Wed, Nov 20 at 11:59p

HW 05: Interpreting interaction term

- **Response** : `log_odds_removed`

term	estimate
(Intercept)	-1.123
distance	0.018
morphlight	0.374
distance:morphlight	-0.028

"For every 1 km increase in distance, the log-odds that a light moth is removed from the tree trunk is (-0.028 + 0.018) = -0.01 times the log-odds of a dark moth being removed from the tree trunk."

1. Why is this interpretation incorrect?

2. Rewrite the interpretation of the interaction effect in terms of `log_odds_removed`.

HW 05: Interpreting interaction term

term	estimate
(Intercept)	-1.123
distance	0.018
morphlight	0.374
distance:morphlight	-0.028

1. Write the interpretation of the interaction effect in terms of the **odds** a moth is removed.

Multinomial Logistic Regression

Practice: *Sesame Street*

- We will analyze data from an [experiment by the Educational Testing Service](#) to test the effectiveness of the children's program *Sesame Street*, an educational program designed to teach young children basic educational skills such as counting and the alphabet

- As part of the experiment, children were assigned to one of two groups: those who were encouraged to watch the program and those who were not

- The show is only effective if children watch it, so we want to understand what effect the encouragement had on the frequency of viewing after adjusting for other characteristics

Response Variable

viewcat

- 1: rarely watched show

- 2: once or twice a week

- 3: three to five times a week

- 4: watched show on average more than five times a week

In pictures: The early years of 'Sesame Street'

Predictor Variables

- **age**: child's age in months

- **prenumb:** score on numbers pretest (0 to 54)

- **prelet:** score on letters pretest (0 to 58)

- **viewenc:** 1: encouraged to watch, 2: not encouraged

- **site:**

    - 1: three to five year old from urban area

    - 2: four year old from suburban area

    - 3: from rural area with high socioeconomic status

    - 4: from rural area with low socioeconomic status

    - 5: from Spanish speaking home

Full data description

Analysis

- Make a copy of the **Sesame Street** project in RStudio Cloud

- Make sure your group's answers are recorded in one team member's RStudio Cloud project.

  - At the top of the project, write the names of the members' who are working on the appex.

  - Submit the name of the team member recording the responses: https://forms.gle/pN6k1M8J3twXwThs6

- Other team members can follow along in RStudio Cloud or using the instructions.