



# Success and Sexism in Movies

Team **007<sup>TM</sup>**

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# What is the Bechdel Test?

Coined by Alison Bechdel in 1985 as a measure of female representation in film, the Bechdel Test assesses movies based on 3 criteria:

1

**Two named women**

Does the film contain at least two named female characters?

2

**Having a Conversation...**

Do these women speak have at least one conversation with one another?

3

**...that isn't about a man**

Do these women have a conversation about something other than a man?



The background of the slide is a dark blue stage with red curtains on the left and right sides. A spotlight from the top right corner illuminates a portion of the stage floor, creating a light gray cone of light that extends towards the center. The text is arranged in two columns on the stage floor.

# Research Question

Does a movie's passage of the Bechdel test influence its success?

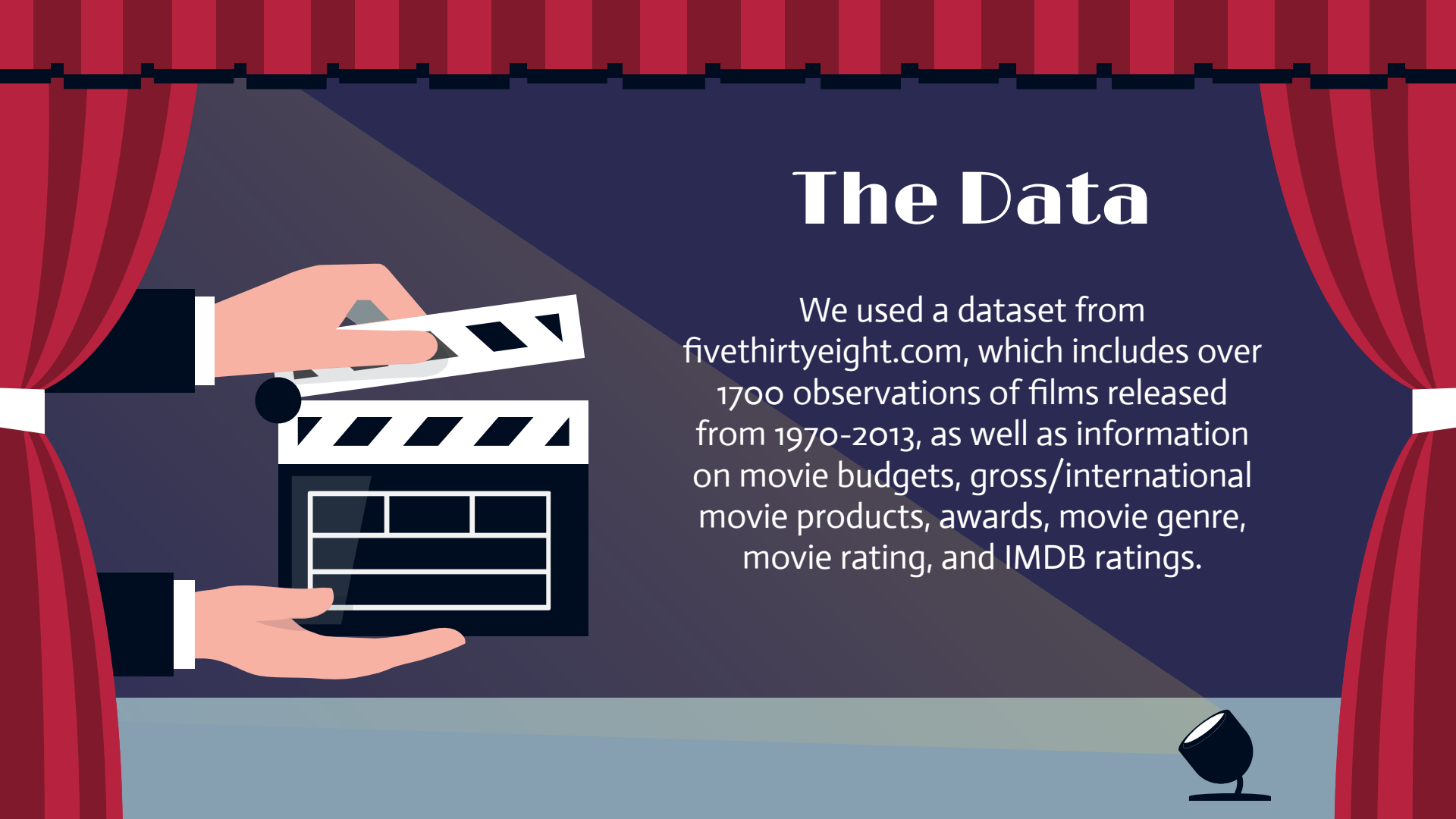
We categorize greater success to mean higher ratings, higher gross income, and earning more awards.

# Hypothesis

Across a general trend, we hypothesize movies that fail the Bechdel test will have greater success. Although there has been progress in creating larger roles for women in film, society still values certain gender stereotypes in films and some of these still do very well in the box office.

# The Data

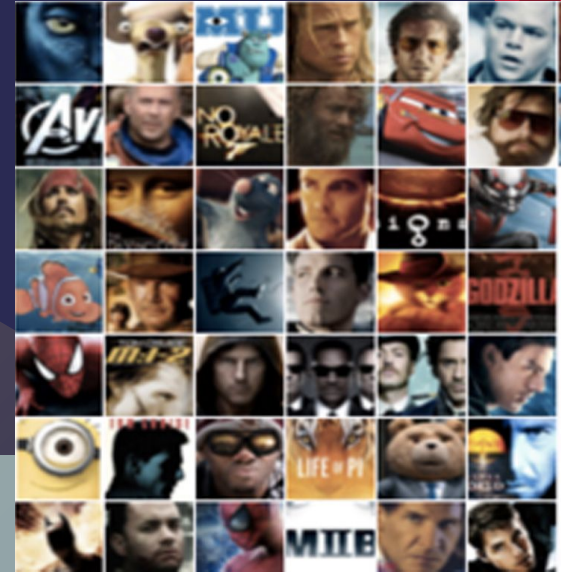
We used a dataset from [fivethirtyeight.com](https://fivethirtyeight.com), which includes over 1700 observations of films released from 1970-2013, as well as information on movie budgets, gross/international movie products, awards, movie genre, movie rating, and IMDB ratings.



# Does your favorite movie pass?

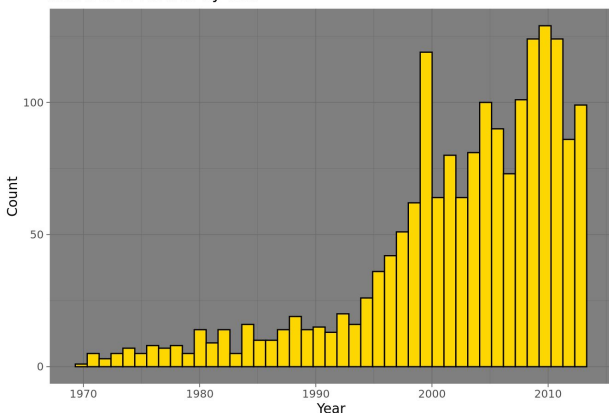
Popular movies that fail the Bechdel test:

1. The Avengers (2013)
2. Iron Man (2008)
3. The Girl with the Dragon Tattoo (2009)
4. Ratatouille (2007)
5. The Lion King (1994)
6. Lord of the Rings Trilogy
7. Harry Potter and the Deathly Hallows (part 2, 2011)
8. Shrek (2001)



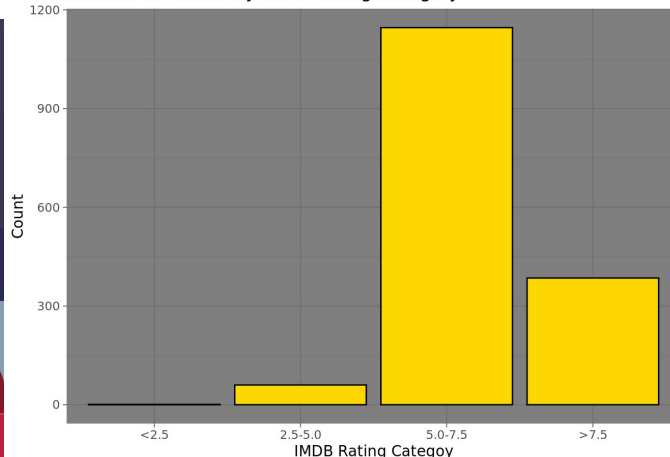
# Highlights from EDA

Number of Movies by Year



Generally, movies are scored within the 5-7.5 category and almost none received a score below 2.5

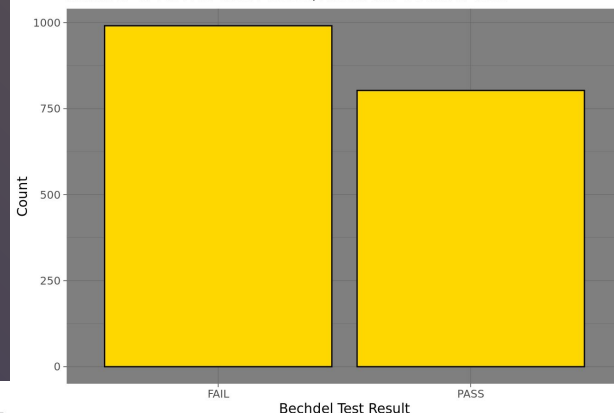
Number of Movies by IMDB Rating Category



In the dataset, there are less movies from older generations.



Number of Movies that Passed/Failed the Bechdel Test



Over half the movies in the dataset fail the Bechdel test.



# Inference, modeling, other analysis

## Chi-Squared Test for Independence for IMDB

- ❖ Whether passing the Bechdel test and IMDB score are independent observations



**Results**

- p-value of  $7.237e-06 < \alpha = 0.05$
- Can reject null hypothesis

## Difference in Means for IMDB Ratings

- ❖ Whether the true mean IMDB score of movies that pass and fail the Bechdel test are different



**Results**

- p-value of  $< 0.001 < \alpha = 0.05$
- Can reject null hypothesis



# Inference, modeling, other analysis

## Difference in Means Test for Income Generated

- ❖ Whether the true mean income of movies that pass and fail the Bechdel test are different

## Chi-squared Test for Oscar Winners

- ❖ Whether passing the Bechdel test and winning an Oscar are independent observations

## Results

- p-value of  $0.0006 < \alpha = 0.05$
- Can reject null hypothesis

## Results

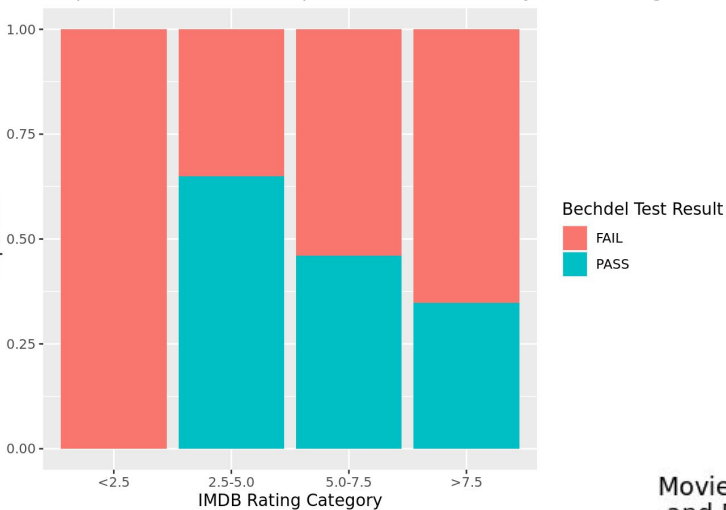
- p-value of  $0.8659 > \alpha = 0.05$
- Fail to reject null hypothesis



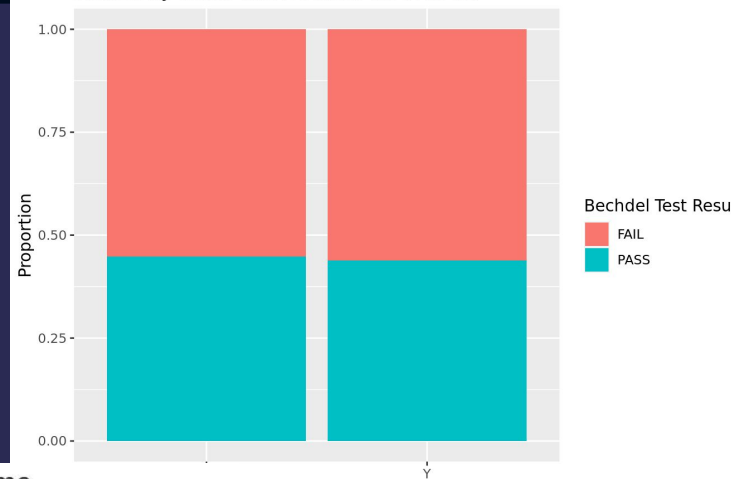


# Analysis Graphs

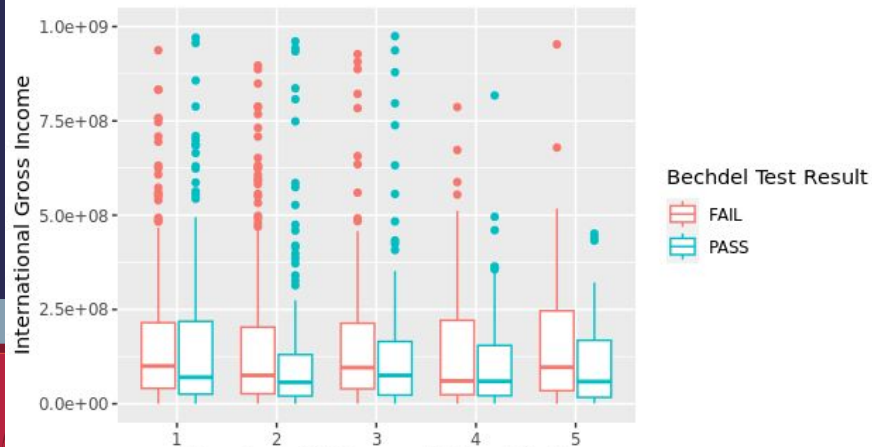
Proportion of Movies that passed Bechdel Test by IMDB Rating



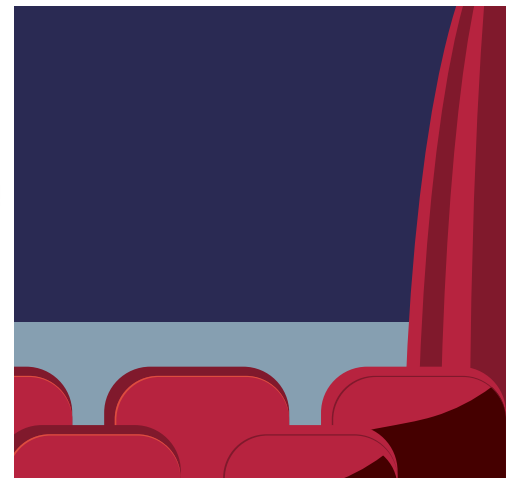
Movies by Oscar and Bechdel Test Result



Movies by period, international gross income, and Bechdel test result



Oscar Won/Lost



# Conclusion /future work

- ★ Despite the lack of evidence in awards, we found that the **overall success in movies increases** when such movies **fail** the Bechdel Test.
- ★ As awards are chosen by a small committee with certain guidelines in place, it makes sense for them not to show a significant difference regarding the Bechdel Test as many biases and politics are at play.
- ★ On the other hand, ratings and income are dictated by the overall viewers showing the greater societal values of a one-dimensional, dependent ideal women.
- ★ Future work could explore probability

