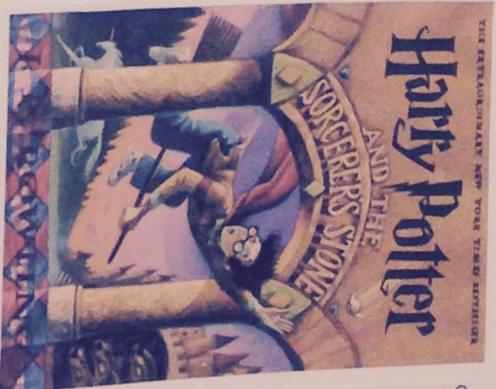# Harry Potter Movies vs. Books

1. The data was collected through Facebook asking my friends "what do you prefer more, the Harry Potter movies or the Harry Potter books."
   - 19 people prefer watching the movies
   - 15 people prefer reading the books.
   } 34 friends responded

2. 55.9% people prefer reading the books.
   44.1% people in the sample data prefer the MOVIES

3. There was a total sample size of 34 people.
   MOVIES had the higher percentage →

   ## MOVIES & BOOKS
   19 successes for people who prefer the MOVIES
   15 successes for people who prefer the BOOKS

4. **ASSUMPTIONS**
   - The data was not RANDOM. There were many bias like convenience bias where I only asked my friends on facebook and/or how people might have never read the book or watched the movie giving bias to their answer.
   - There are at least 10 successes and 10 failures.
     MOVIE: # of success: 19, # of failures: 15 } both ≥10
     BOOK: # of sucess: 15, # of failures: 19
   - They are INDEPENDENT because there is no relationship between movies and books. DOES NOT meet assumptions.
   - The data does not meet the assumption so it DOES NOT apply to the population.

6. P_1 = the % of people who preferred the Harry Potter MOVIES
   P_2 = the % of people who prefer the Harry Potter BOOKS
   $H_0: P_1 = P_2$ (claim)
   $H_a: P_1 \neq P_2$

7. The test statistic for the 2 proportions is **0.9701**

8. **TEST STATISTIC SENTENCE**
   The sample percent of people who preferred the HP movies was 0.9701 standard errors above the percent of people who prefer the HP books.

9. **NOT SIGNIFICANT**
   The test statistic of 0.9701 is less than 2 and we have a HIGH P-value.

10. P-value: **0.332**

11. **P-VALUE SENTENCE**
    If the H_0 is true, then there is a 23.2% chance of getting the sample data or more extreme.

12. **Likely to happen by RANDOM CHANCE**
    Because we have a HIGH P-VALUE of 0.332

13. **FAIL TO REJECT THE H_0**
    Because the P-value of 0.332 is greater than the significance level at 5% (0.05)

14. **CONCLUSION**
    There is NOT significant sample evidence to REJECT the claim that: people who prefer the Harry Potter movies is equal to the percentage of people who prefer the Harry Potter BOOK

15. If we let the people that prefer the movies be population 1, and the people that prefer the books be population 2, then a 90% confidence interval for the difference is:

16. **CONFIDENCE INTERVAL SENTENCE**
    We are 90% confident that between 8.04% and 31.67% there is no significant difference between the percent of people who prefer the Harry Potter movies and the percent of people who prefer the Harry Potter books.
    (0.0804, 0.3167)

17. There is no significant difference between the first group and the second group. There is a small sample difference of: 0.11764706
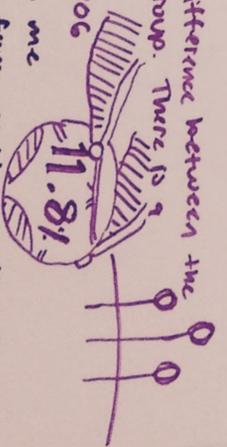
18. This topic was interesting to me because many Harry Potter fans would say that they prefer the book over the movie, or in other examples people prefer the avengers comics over the movies. I personally believed that there is an equal percentage of people who like the Harry Potter book and movie. I was close to having a correct hypothesis but because there was not significant sample evidence it would be best to increase the sample size.
    There were many bias in the data like people only read the book or as a couple of my friends said, they are too lazy to read so they would rather watch the movie. This shows how harmful bias are to effecting the Hypothesis results so we need to be careful when it comes to the numbers and percentages that media or companies give to us.

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