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Disney Movie Financial Analysis: Term Project Summary

Statistical/Hypothetical Question

The primary research question explored in this project was:
Which decade produced the most financially successful Disney movies when adjusted for inflation?
The hypothesis was that the 1990s and 2000s would have the highest-grossing movies due to Disney's Renaissance and expansion strategies.

Outcome of Exploratory Data Analysis (EDA)

The dataset contained 575 Disney movies released between 1937 and 2016 and included information such as total gross, inflation-adjusted gross, genre, and decade.

- The 1990s and 2000s had the highest number of movies released.
- The mean inflation-adjusted gross revenue was $119.59M, with a median of $55.42M, showing a right-skewed distribution.
- Pearson correlation between total gross and inflation-adjusted gross was 0.426, indicating a moderate positive correlation.
- T-test comparing the 1990s vs. 2000s:
    - t-statistic: -1.738
    - p-value: 0.0829 (Not statistically significant)
    - No strong evidence that the 1990s were financially superior to the 2000s.
- Regression Analysis Results:
    - R^2 Value: 0.41 (41% of revenue variation explained)
    - Mean Squared Error: $\$1.04 \times 10^{16}$
    - The model showed some predictive power, but other factors beyond total gross and decade influence financial success.

What Was Missed in the Analysis?

The analysis covered historical revenue trends, but it did not account for marketing strategies, merchandising, or re-releases, which could impact Disney's financial success. Also, global vs. domestic revenue breakdowns could have added another layer of insight.

Helpful Variables That Could Have Been Included

- Marketing budgets and promotional expenditures (advertising impact on revenue).
- Streaming and post-theater earnings, which affect long-term profitability.
- Audience ratings and reviews (IMDb, Rotten Tomatoes) to analyze how reception affects revenue.

Incorrect Assumptions Made

- Initially, it was assumed that movie earnings followed a normal distribution, but the data was right-skewed due to blockbuster outliers.
- Expected total gross and inflation-adjusted gross to have a higher correlation, but other factors influenced revenue trends.

Challenges Faced & Areas for Further Understanding

- Cleaning inconsistent date formats and ensuring decade classification was correct.
- Understanding how extreme outliers affect statistical analyses.
- Interpreting regression results and improving predictive accuracy.
- Choosing the right statistical tests to determine significance in revenue trends.

Conclusion

This project provided valuable insights into Disney's financial trends and helped determine that while the 1990s had strong performance, they were not statistically superior to the 2000s. Future research should examine marketing impacts, international revenue, and streaming trends to better understand Disney's evolving box office success.