A comparison of the IMDB ratings of recent Dreamworks and 20th Century Fox movies

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Theoretical hypothesis

Recent movies by Dreamworks are as good as recent movies by 20th Century Fox.

Dependent variable

The dependent variable is the IMDB score. Via the advanced title search, I searched for feature films with a release date to set to max 2019. I searched once for Dreamworks and once for 20th Century Fox. For each, the titles were sorted starting with the most recent release date.

One observation was excluded

One movie was found to have no ratings on IMDB (Thomas and The 2 Brothers). This observation was removed from the analysis, leaving 20th Century Fox with 33 instead of 34 observations.

Statistical test suggests that recent Dreamworks and 20th Century Fox movies are equally good

For each company, the mean and standard deviation were computed (Dreamworks: mean = 6.83, sd = 0.71; 20th Century Fox: mean = 6.58, sd = 0.99). These were used to perform an equivalence test (Figure 1). The null hypothesis of a mean difference equal or greater than a Cohen's d of 0.8 (equivalent to a raw difference of 0.6888) was rejected at the 5% level (mean difference = 0.248, 90% CI: [-0.103, 0.599], $t_{60.05} = -2.1$, $p = 0.020$).

It was not planned in the pre-registration to perform a null hypothesis significance test. Even though this is included in Figure 1, it is not interpreted here.

Conclusion

Overall, this analysis suggests that the observed difference in ratings between recent Dreamworks and 20th Century Movies is statistically equivalent to 0, with an equivalence bound of Cohen's d of 0.8. Thus, it is concluded that recent Dreamworks and 20th Century Movies are likely not to largely differ in their average IMDB ratings, which supports the hypothesis that their recent movies are equally good.

Equivalence bounds −0.689 and 0.689
Mean difference = 0.248
TOST: 90% CI [−0.103;0.599] significant
NHST: 95% CI [−0.172;0.668] non−significant
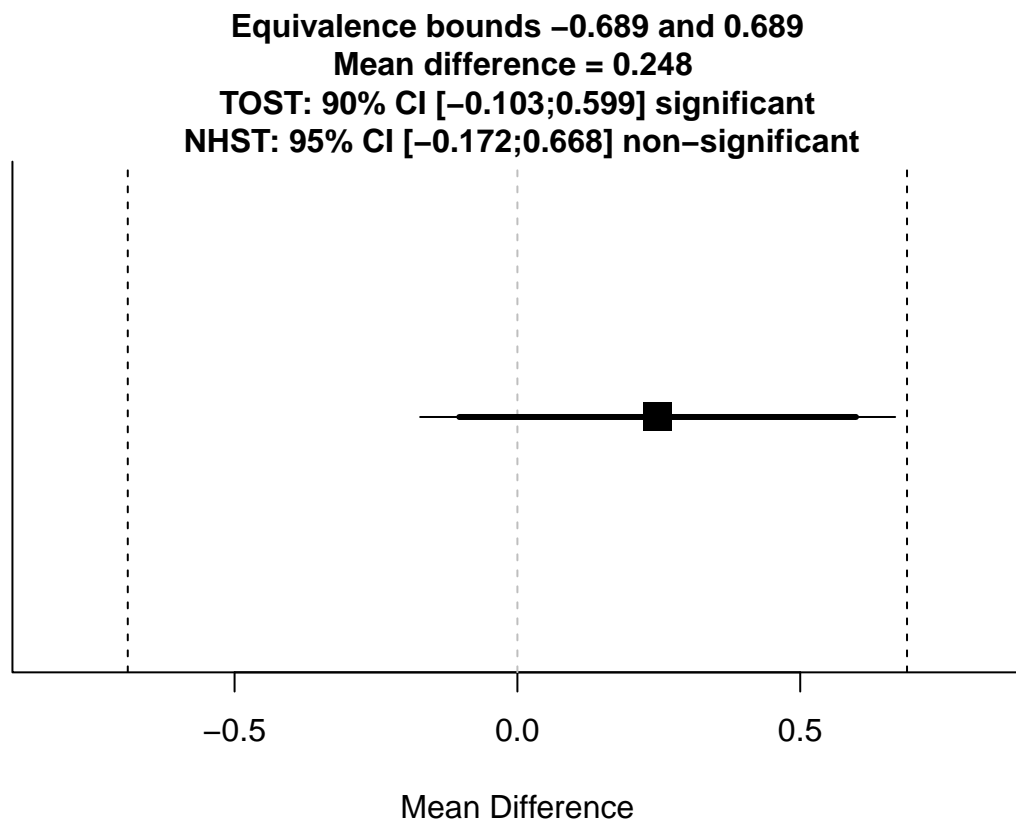
Mean Difference

Figure 1: The null hypothesis that the Cohen's d effect size is equal to or larger than 0.8 is rejected.