

DOES STUDIO INFLUENCE ROTTEN TOMATOES CRITICAL CONSENSUS? AN EMPIRICAL ANALYSIS

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Introduction

Rotten Tomatoes is a film review aggregator site that compiles multiple critics' perspectives on a given film, assesses whether their review should be counted as "positive" or "negative," and generates a percentage score based on how many critics rated the film positively.

Since this aggregator site was previously owned by Warner Brothers, and has recently transferred ownership to the same company which holds Universal, a potential conflict of interests between the studio and the aggregator may exist: while Rotten Tomatoes ostensibly enjoys no control over the content of the reviews it aggregates, the site enjoys discretion in determining *who* counts as a reviewer for its purposes.

While for all studios, no significant relationship exists between year and critical consensus, this relationship is *exceedingly* underdeveloped in the case of Warner Brothers, suggesting that aggregator ownership has no major relationship to critical consensus.

Data Collection and Methods

I constructed the data set used by selecting the top 50 highest-grossing films in each year from 1998 (the first year of Rotten Tomatoes' existence) through 2015. I then removed duplicate values (present because some films grossed large sums across two years), and compiled Rotten Tomatoes critic score and audience score for each. I term the former score "RT Score" throughout the following analysis. I describe the films thus sampled as "Major Films."

Using Microsoft Excel, I coded this data according to the following numbering scheme for particular studio distributors:

Paramount Pictures	1
Walt Disney	2
Dreamworks SKG	3
20th Century Fox	4
New Line	5
Miramax	6
Warner Bros.	7
Universal	8
Sony Pictures	9
Lionsgate	10
Summit Entertainment	11
MGM	12
Weinstein Co.	13
Relativity	14
Other	15

One limitation of this method is that it may not properly capture high-grossing films whose revenues were split between years, in neither year reaching the threshold necessary to be counted in the “top 50” cutoff. Subsequent research along these lines would likely employ an even larger sample size (the rationale for not doing so here is that low-grossing films, many of which were in limited release, often are reviewed by far fewer critics, thus rendering the RT Score a less reliable benchmark of overall critical consensus.

Results

When the general population is sampled, there appears to be no significant statistical relationship between year and RT Score.

Source	SS	df	MS	Number of obs	=	878
				F(2, 875)	=	4.57
Model	245.466877	2	122.733438	Prob > F	=	0.0106
Residual	23478.9386	875	26.8330727	R-squared	=	0.0103
				Adj R-squared	=	0.0081
Total	23724.4055	877	27.0517736	Root MSE	=	5.1801

Year	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Distributor~e	.1351535	.0514336	2.63	0.009	.0342058	.2361012
RT	.0122897	.0070319	1.75	0.081	-.0015118	.0260911
_cons	2005.057	.5509109	3639.53	0.000	2003.976	2006.138

More interestingly, however, when all distributors other than Warner Bros. (the owner of Rotten Tomatoes) are excluded from the sample, a starkly different outcome presents itself: the relationship between RT Score and year is almost *four times weaker* than it is in the general population.

Source	SS	df	MS	Number of obs	=	137
				F(1, 135)	=	1.01
Model	27.8550442	1	27.8550442	Prob > F	=	0.3160
Residual	3712.7143	135	27.5015874	R-squared	=	0.0074
				Adj R-squared	=	0.0001
Total	3740.56934	136	27.5041863	Root MSE	=	5.2442

Year	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
RT	.0180244	.0179097	1.01	0.316	-.0173954	.0534442
_cons	2005.852	1.131747	1772.35	0.000	2003.614	2008.09

As a counterpoint, when an identical operation is performed to isolate Paramount Pictures' data, the relationship between year and RT score approaches the threshold of statistical significance (suggesting a stronger relationship between year and score), but does not cross it.

Source	SS	df	MS	Number of obs	=	117
				F(1, 115)	=	3.82
Model	90.5195779	1	90.5195779	Prob > F	=	0.0531
Residual	2726.72829	115	23.7106807	R-squared	=	0.0321
				Adj R-squared	=	0.0237
Total	2817.24786	116	24.2866195	Root MSE	=	4.8694

Year	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
RT	.0385893	.01975	1.95	0.053	-.0005317	.0777103
_cons	2004.206	1.259585	1591.16	0.000	2001.711	2006.701

Conclusion

The null hypothesis cannot be rejected: there is no statistical reason to assume that Warner Brothers' ownership of Rotten Tomatoes has influenced the RT Scores of the studio's films, or that Universal's subsequent ownership (assuming that Universal does nothing different) will have an influencing effect.