Who's the Next Winner? Using Conditional Logistic Regression Model to Predict Results for Academy Awards

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Introduction

Academy Awards, also known as Oscars, is one of the most prestigious awards in the film industry. It is presented annually at the end of the year and before the results of Academy Awards are revealed, there are several other similar awards being awarded, for instance, Golden Globe Awards. The first Academy Awards was held in 1929, reviwing films made in 1928. Some of its awards go to individuals such as the actors and actresses in a film while some go to a film.

As actors and actresses will be evaluated on their performance in the film they participated, it is reasonale to assume that their peformance will also affect the evaluation of the film. Previous studies have shown that being nominated for other Oscars awards (e.g., best directing) or having won a non-Oscars award can have an impact on whether a film will subsequently win an Oscars. However, not all types of nominations seem to be equal. A study by shows that if the leading actress has been nominated for the best actress in a leading role, it might lower the possibility of the film winning a best picture.

In this study, I will examine the correlation between having strong acting performance (i.e., either having been nominated for other Oscars awards or already won a non-Oscars) and winning Academy Awards for best picture, using conditional logistic regression model. Three hypotheses are formulated as follows,

1. The total number of nominations will affect the possibility of a film winning best picture.
2. The performance of actors and actresses will affect the possibility of a film winning best picture.

3. Whether or not a file has won a non-Oscars will affect the possibility of a film winning best picture.

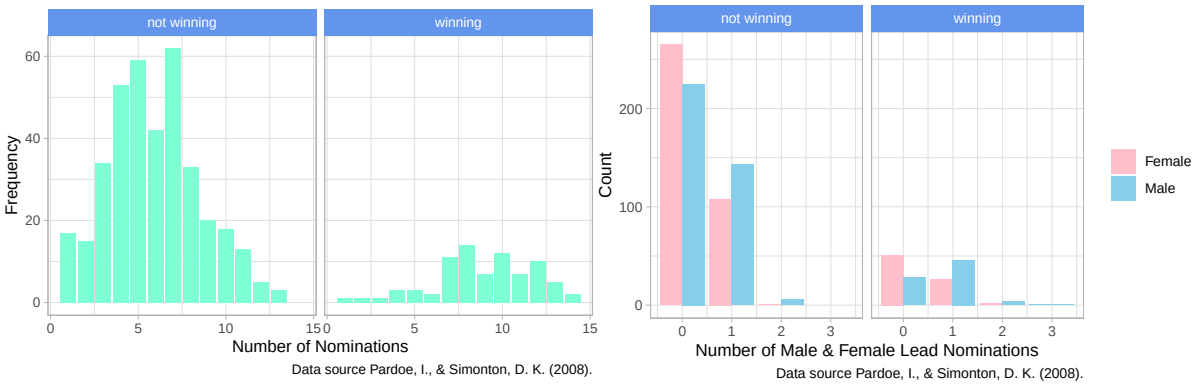
Table 1. Descriptive Data on Variables

Variable	Overall N = 453[1]	Winning	
		0 N = 374[1]	**1** N = 79[1]
Oscar Nominations	6 (4, 8)	6 (4, 7)	9 (7, 11)
Director Nomination	281 (62%)	206 (55%)	75 (95%)
Gloden Globe Drama	61 (13%)	27 (7.2%)	34 (43%)
Gloden Globe Musical/Comedy	35 (7.7%)	25 (6.7%)	10 (13%)

[1]Median (Q1, Q3); n (%)
0 = Did not win Oscars
1 = Won Oscars
Data source Pardoe, I., & Simonton, D. K. (2008)

In addition, predictions on the results of Oscars for 2025 will be presented using a model that best describes previous data.

Data



(a) Total Nominations

(b) Male and Female Actor Lead Nomination

Figure 1. Distributions of Variables by Winning or Not

Table 2. Odds from Conditional Logistic Regression Models

Model Specifications			
	(1)	(2)	(3)
Nomination	1.54***	1.56***	1.49***
	[1.32, 1.80]	[1.33, 1.82]	[1.26, 1.75]
Director	5.59**	5.18**	4.94**
	[1.88, 16.59]	[1.73, 15.51]	[1.60, 15.18]
Actor & Actress	1.12		
	[0.72, 1.72]		
Actor		1.29	1.20
		[0.78, 2.12]	[0.71, 2.05]
Actress		0.87	0.79
		[0.47, 1.62]	[0.41, 1.51]
Golden Globe			3.19***
			[1.69, 6.00]
Num.Obs.	453	453	453
AIC	179.1	179.8	168.1
BIC	191.4	196.3	188.7

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Source: Estimated based on author's calculations.
Reference: Pardoe, I., & Simonton, D. K. (2008)

Table 3. Likelihood Ratio Test on Models

Model Comparisions

	Model 1	Model 2	Model 3
Chisquare	NA	1.26	13.72***
P-value	NA	0.26	0.00

*** $P < 0.01$
The Likelihood ratio test for Model is not applicable as it is the most basic model in this analysis.
Figures based on author's calculation
Reference: Pardoe, I., & Simonton, D. K. (2008)

Method

Analysis

Results

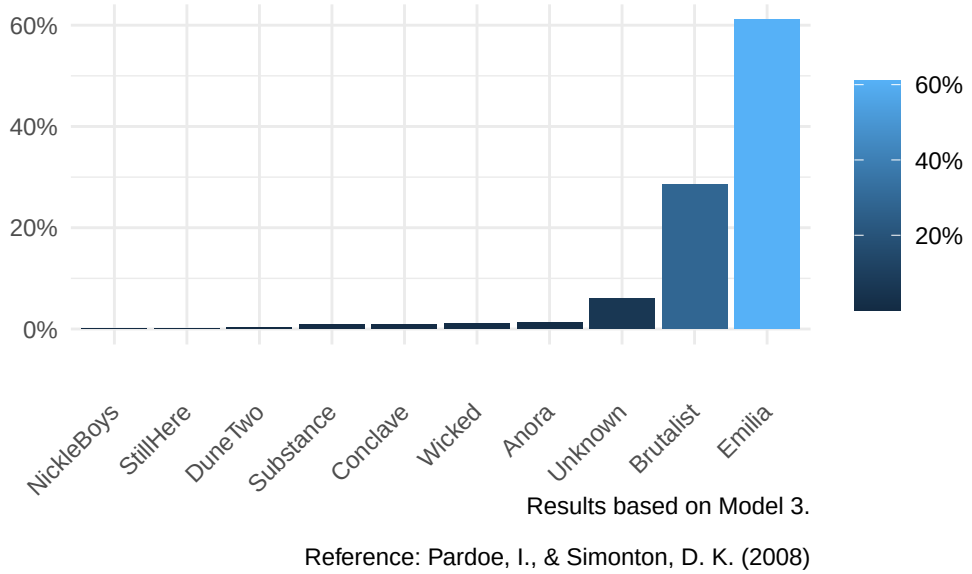


Figure 2. Predicted Probability of Winning Oscars Best Picture in 2025

Conclusions