

# Playing to Win: Exploring the Causal Relationship between Game Features and Positive User Feedback in the Steam Marketplace

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# What Impacts Positive Ratings for Video Games in the Steam Marketplace

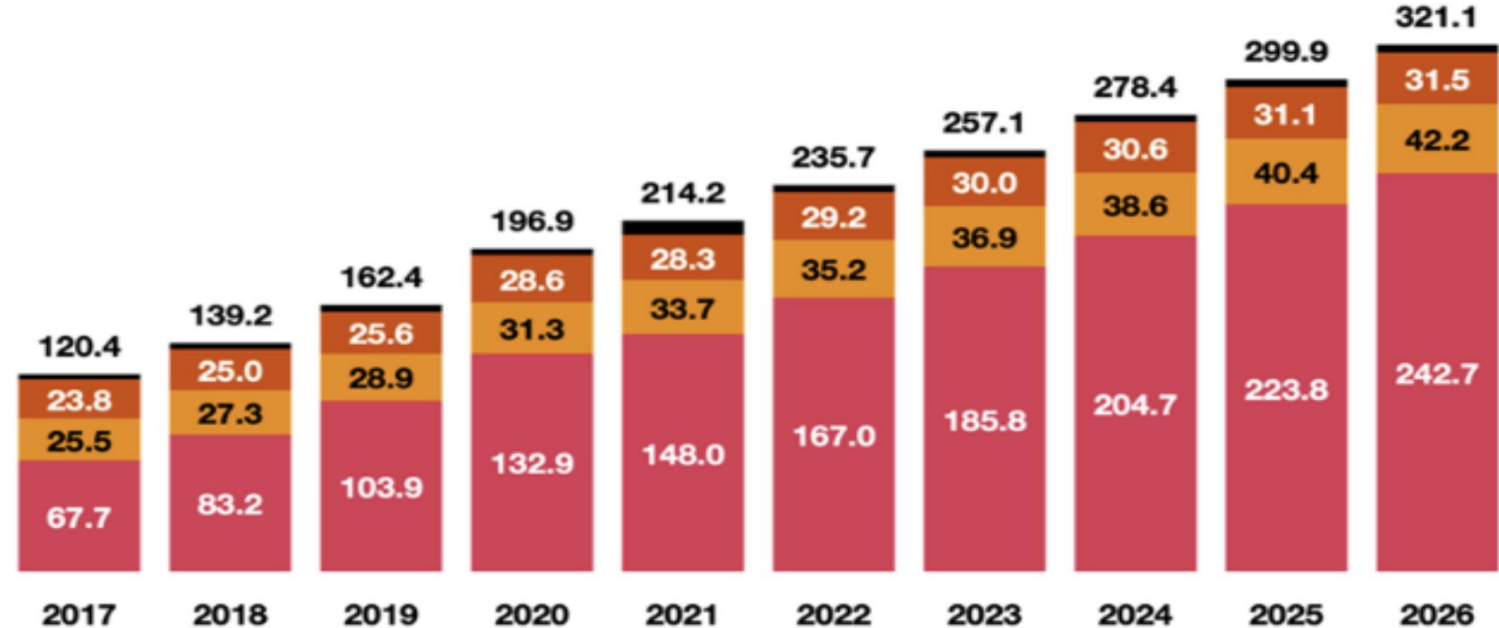
The video game industry has experienced tremendous growth in recent years

Positive ratings on Steam are critical for a game's success 86% of players report paying attention to review scores(ESA)

Therefore, understanding the factors that impact positive ratings on Steam is crucial for developers seeking to improve or forecast their games' sales and success.

**Total global video games revenue, by segment (US\$bn)**

■ Social/casual gaming   ■ PC games   ■ Console games  
■ Integrated video games advertising



# What is Steam?

Steam is the largest digital distribution platform for PC games, with over 130 million monthly active users in 2021 and thousands of games available for purchase

In 2020, the top 100 games on Steam generated \$14.3 billion in revenue



# Why should we care?

For game developers and investors,

For gamers,

Additionally, understanding the relationship between these factors and positive ratings can provide valuable insights into consumer behavior in the video game industry.

# Previous Literature

- Do online Customer Reviews Matter? Evidence from the video game industry- (Feb 9,2008 Bounie, David)
  - Here they explore topics relating to magazines and professional critic websites
- Factors that Impact Video Game Sales?(*Causeweb*)
  - -This study applied a linear regression to three different countries and got statistically significant variables for different countries suggesting consumer preference per region for video games
- An empirical study of early access games (EAG) on the steam platform?-(June 16 2017 Lin, Dayi)
  - Throughout their study they came to the conclusion that eliciting early feedback and more positive reviews to attract additional new players.

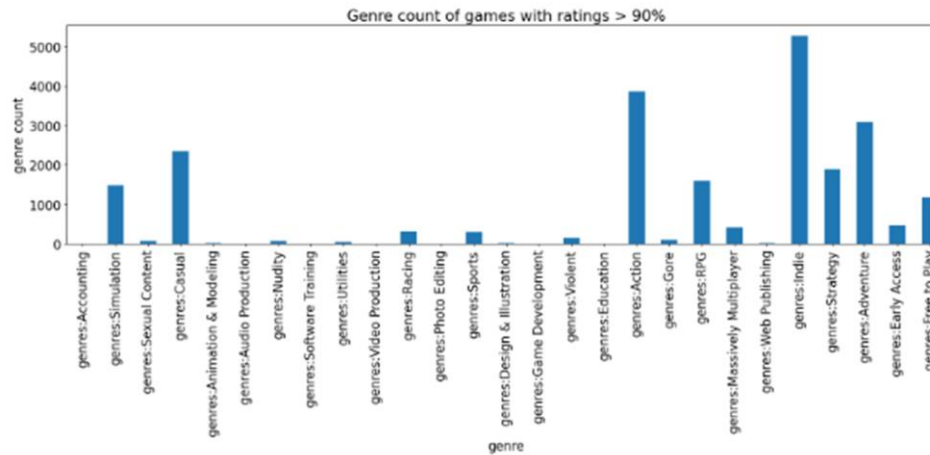
# Contextual Economic Theory

This is rooted in the economic theory of consumer choice, where individuals make decisions based on their preferences and budget constraints.

# Data

Dataset is from Kaggle that was gathered around May 2019 from the Steam Store using SteamSpy Api's.

- Cleaned it to (8479,40)





# Research Questions

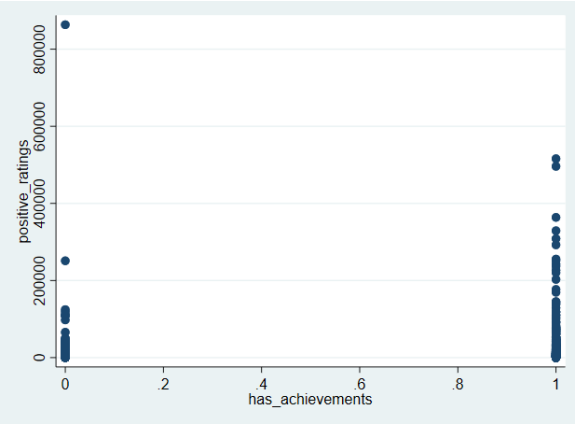
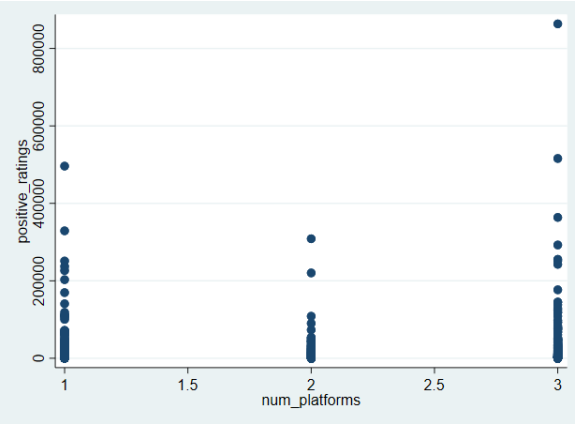
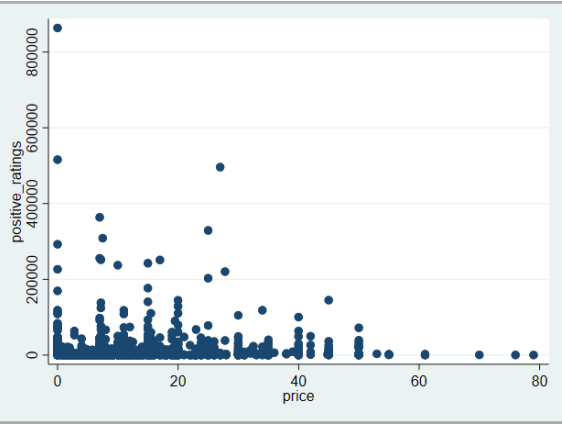
- What game design factors influence positive ratings for a video game that is listed on the steam marketplace
- Does Early access and Free To Play have a positive relationship with positive ratings?

# Hypothesis

# Data

Table 1:  
Summary  
Statistics

	mean	sd	min	max
positive_rating	2816.042	17942.53	0	863507
s				
has_achievements	.6232602	.4845974	0	1
rating	73.10565	17.66148	0	100
average_playtime	448.5197	3205.812	0	190625
price	7.118173	8.255575	0	78.99
num_platforms	1.649092	.8465522	1	3
genresfreetoplay	.1400094	.3470173	0	1
genresearlyaccess	.0556735	.2293037	0	1
N	8478			



# Empirical Strategy

$$pr = \beta_0 + \beta_1 \text{has\_achievements} + \beta_2 \text{rating} + \beta_3 \text{average\_playtime} + \beta_4 \text{price} + \beta_5 i.\text{num\_platforms} + u_i$$

Table 2: Effects on Positive Ratings

	(1) positive_ratings	(2) positive_ratings	(3) lnpr
has_achievements	510.5 (416.8)	371.4*** (26.23)	0.342*** (0.0351)
rating	76.59*** (11.21)	37.91*** (3.850)	0.0436*** (0.000945)
average_playtime	0.869*** (0.0596)	0.377*** (0.0486)	0.0000463*** (0.00000501)
price	231.0*** (25.19)	79.59*** (11.61)	0.0832*** (0.00212)
1.num_platforms	-315.2 (542.7)	-557.2*** (22.85)	0.0758* (0.0457)
2.num_platforms	1930.1*** (477.8)	546.5*** (99.64)	0.272*** (0.0402)
genresfreetoplay	3537.0*** (591.2)	1406.4*** (193.8)	0.841*** (0.0498)
genreearlyaccess	-799.8 (839.3)	-437.4*** (92.59)	0.409*** (0.0706)
_cons	-6007.7*** (835.3)	-2419.0*** (299.3)	1.571*** (0.0705)
<i>N</i>	8478	8478	8476
<i>R</i> <sup>2</sup>	0.051	0.783	0.385
adj. <i>R</i> <sup>2</sup>	0.050	0.782	0.384

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

# Results summarized

Achievements (+34.36 %), average playtime (+0.0005%), price (+8.3%)  
, and free to play games (+84.1)

Early access games were found to be associated with an (-41%)

# Conclusions

I find evidence that positive ratings is impacted by game features such as having achievements and average playtime

Further analysis can go into what increases a user's average playtime per game