

# Gamerlytics

A project by nOObs

Huntley Bodden – Github manager and API calls

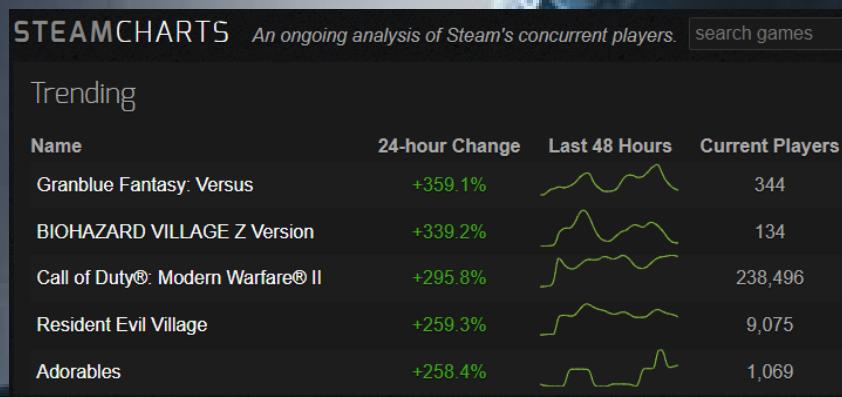
Nicoleta Cosereanu – Data analytics and researcher

Yi Lu – Statistics and research

Devin Sherwood – Hypothesis testing

# Project Outline

Analyze data from the popular gaming platform, Steam, to understand how key influencers such as price, ratings and playtime are driving both gamer behavior and game popularity.



### Steam Breaks Records With More Than 30 Million Players Over The Weekend

More than 30 million people were using Steam at the same time at one point on Sunday afternoon.

BY JOSH COULSON PUBLISHED 5 DAYS AGO





## Data collection, investigation and cleansing

- ◊ Data was retrieved via API calls from various Steam sources and combined
  - ◊ Steamspy.com/api was used to retrieve game info: ID, game name, developer, publisher, positive & negative ratings, owners, price info, concurrent users and game time averages [returned 24,735 records]
  - ◊ Api.steampowered.com was used to retrieve current player count by game id [returned 21,119 records]
- ◊ After analyzing the retrieved data, we identified the key influencers we wanted to analyze in our project, such as price, players, concurrent players, average game time and ratings
- ◊ We assigned data types and created a csv file for our analysis

# Definitions and context

- ❖ **Owner Tiers:** A(most) to M(least)
- ❖ **Rating:** Calculated using positive and negative ratings as follows:
  - ❖ If positive ratings are higher than negative, % positive of total shown as positive value
  - ❖ If negative ratings are higher than positive, % negative of total shown as negative value
- ❖ **Players:** number of current registered users for each game
- ❖ **Concurrent users:** number of people playing a game at the same time

owners	Tier
200,000,000 .. 500,000,000	A
50,000,000 .. 100,000,000	B
20,000,000 .. 50,000,000	C
10,000,000 .. 20,000,000	D
5,000,000 .. 10,000,000	E
2,000,000 .. 5,000,000	F
1,000,000 .. 2,000,000	G
500,000 .. 1,000,000	H
200,000 .. 500,000	I
100,000 .. 200,000	J
50,000 .. 100,000	K
20,000 .. 50,000	L
0 .. 20,000	M



# Research topics summary

- ❖ Hypothesis Question
- ❖ Correlations and trends:
  - ❖ Price and number of players
  - ❖ Ratings and price
  - ❖ Players and average game time
  - ❖ Players and positive rating
- ❖ Publisher comparisons
  - ❖ Identify top game publishers with most potential growth in the short-run

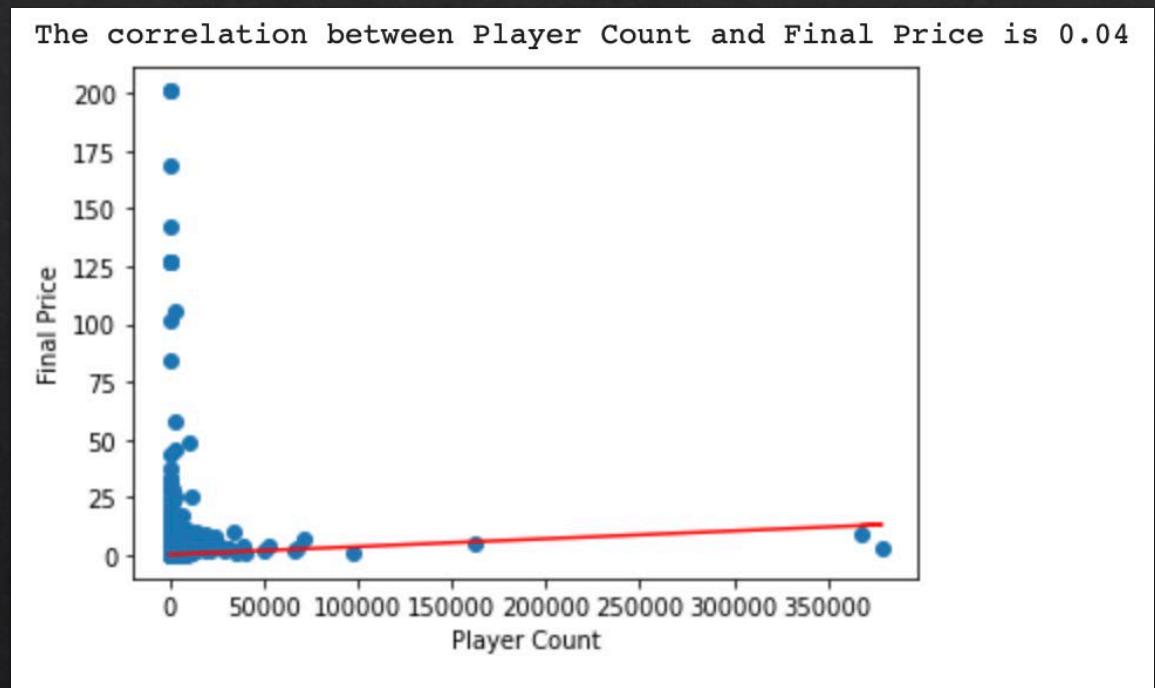
# Hypothesis

Is price a factor in game popularity?

- $H_A$ : [Price] is NOT a factor in [game popularity]  $R\$-pc = 0$
  - $H_0$  : Price is a factor  $R\$-pc \neq 0$

**Null Hypothesis:** Our Null Hypothesis suggests the price of the game is a factor in game popularity

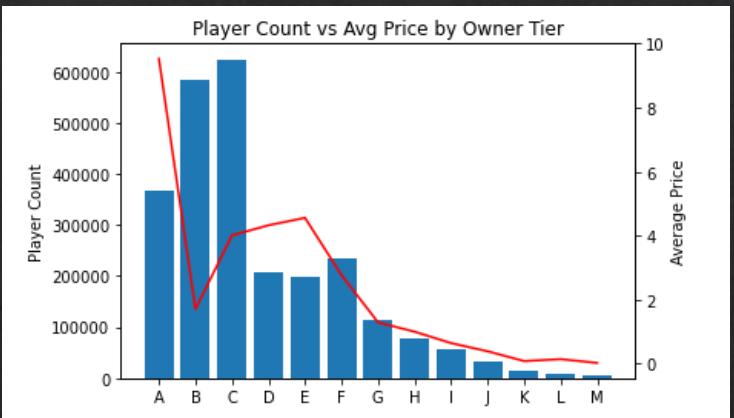
**Alternative Hypothesis:** Our Alternative Hypothesis suggests price of a game is NOT a factor in game popularity



# Price

How expensive are the top 10 games?

- With a correlation factor of 0.04, it is not surprising that the most expensive games (Owner Tier A) have more players than free games.



Top 10 games by player count

Tier	developer	name	player count	Final Price_\$
B	Valve, Hidden Path Entertainment	Counter-Strike: Global Offensive	378812	2.64
A	Valve	Dota 2	368142	9.53
C	Smilegate RPG	Lost Ark	162724	4.99
B	Valve	Team Fortress 2	97140	1.04
C	Facepunch Studios	Rust	71468	7.20
C	Respawn Entertainment	Apex Legends	67980	3.09
B	KRAFTON, Inc.	PUBG: BATTLEGROUNDS	67089	2.22
C	Bungie	Destiny 2	53207	4.02
C	Rockstar North	Grand Theft Auto V	50354	1.86
B	Amazon Games	New World	40836	0.94

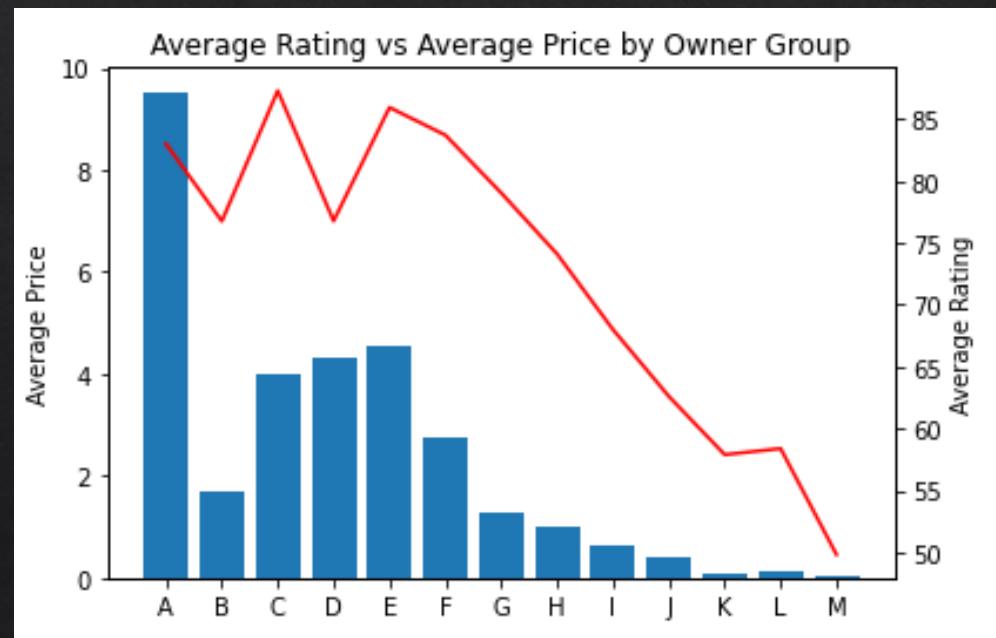
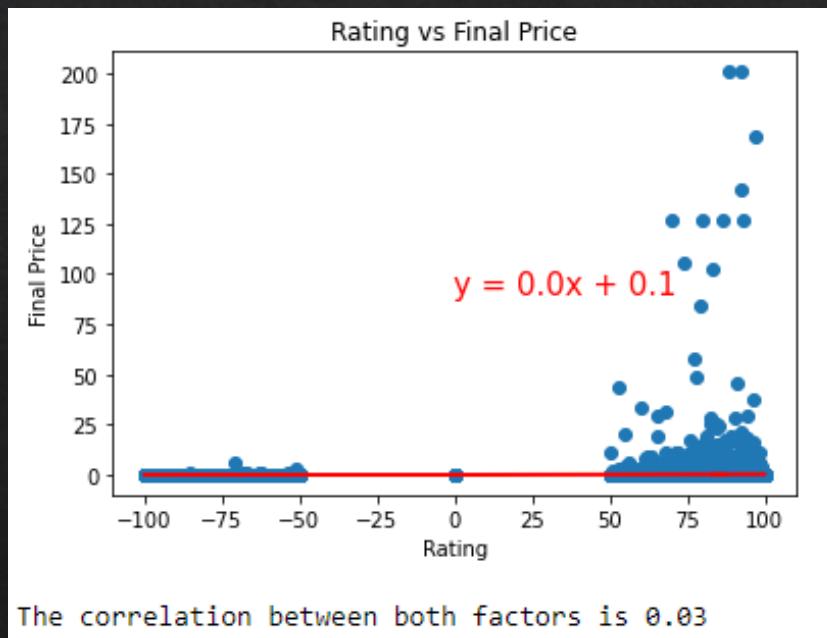
Top 10 games by price

Tier	developer	name	player count	Final Price_\$
L	Geod Studio	3dSen PC	1	200.88
M	BonusXP	Stranger Things 3: The Game	0	200.88
L	Revmatek	Tree Simulator 2022	26	168.38
I	Ninja Kiwi	Bloons Monkey City	291	142.30
I	USERJOY Technology Co.,Ltd.	Heroes of the Three Kingdoms	35	126.94
J	Techland	Dying Light: Bad Blood	1	126.94
J	Ovid Works	Interkosmos	0	126.94
M	Bluedrake42 Limited Company	Iron Armada	0	126.94
F	CCP	EVE Online	2909	105.36
I	Madmind Studio	SUCCUBUS: Prologue	32	102.04

# Ratings

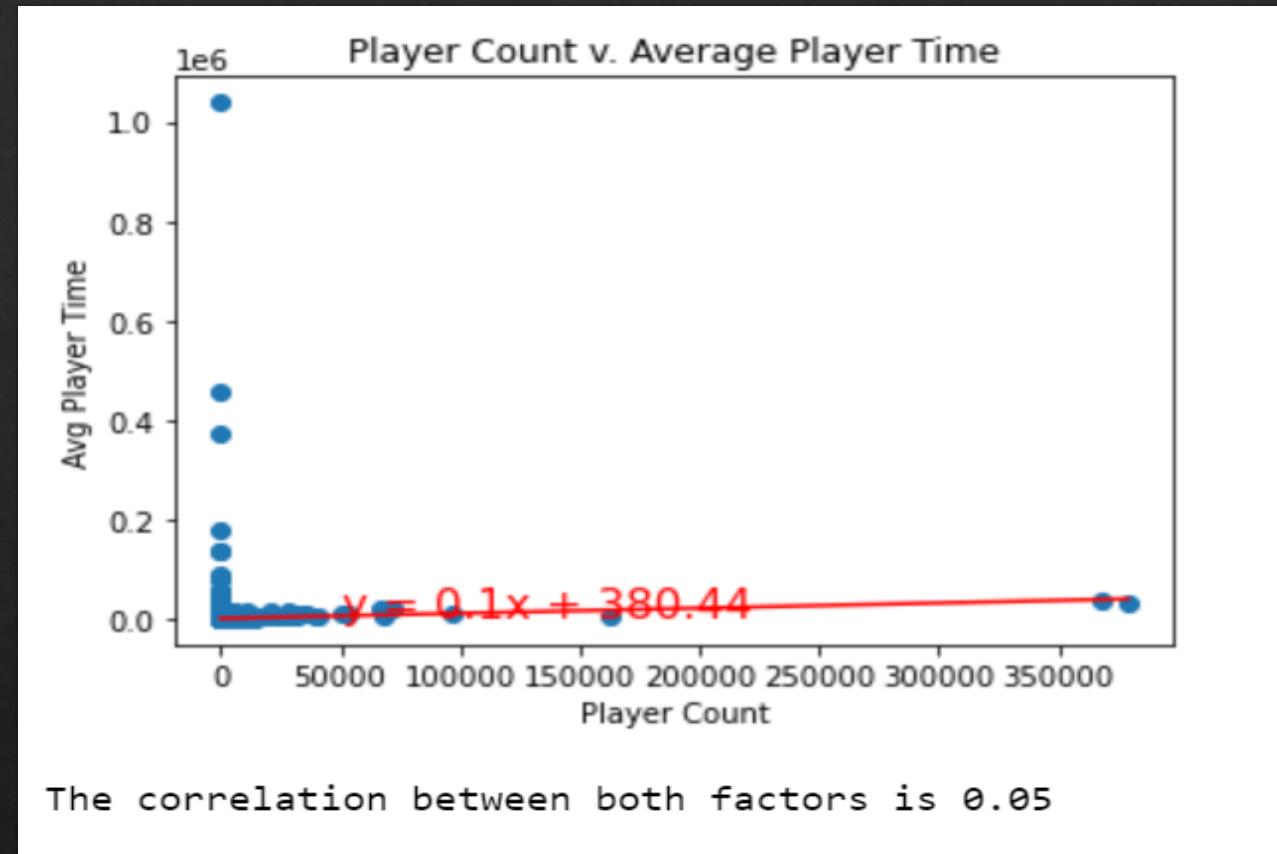
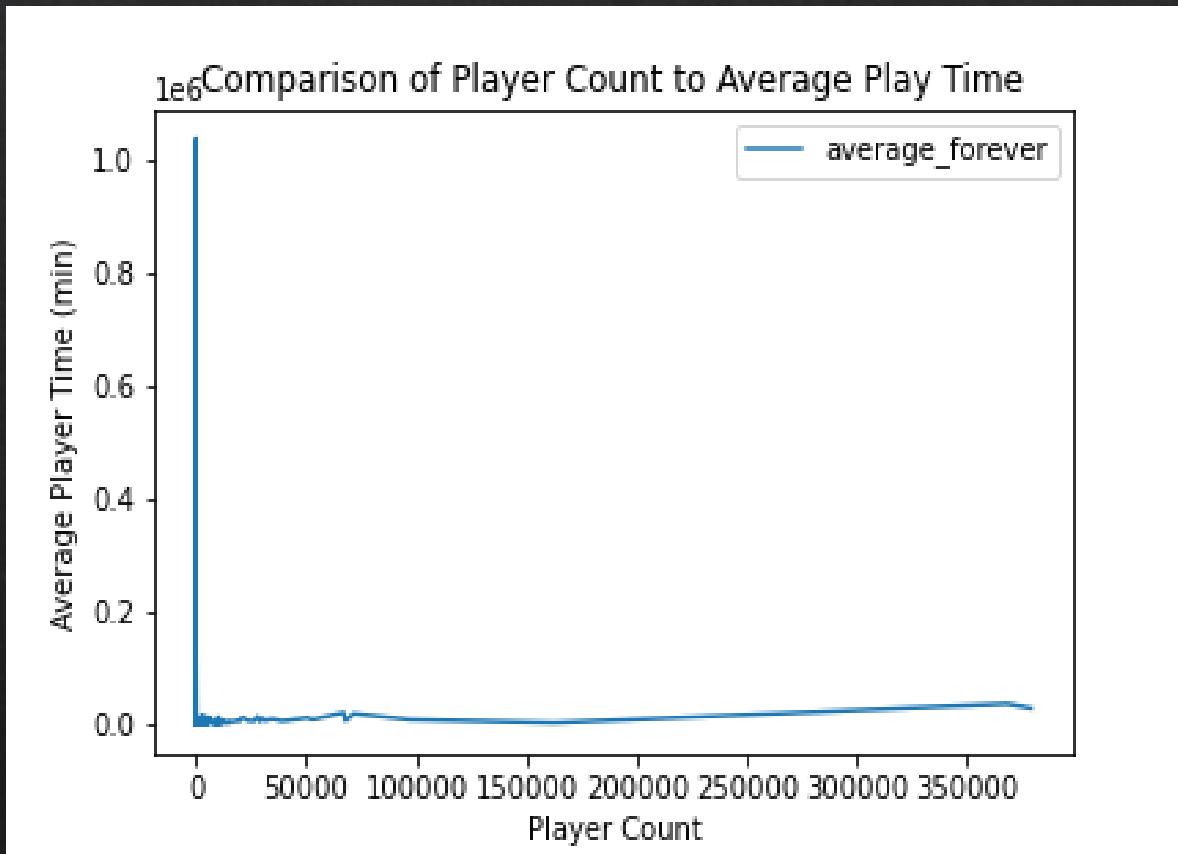
Are gamers more inclined to rate a game higher if they pay more for it?

- ❖ By analyzing the rating and price we concluded that price is not an important factor in a game's rating. The correlation factor between price and rating is 0.03
- ❖ Owner Tier A has the highest price, yet not the highest rating



# Comparison of Player Count to Avg Player Time

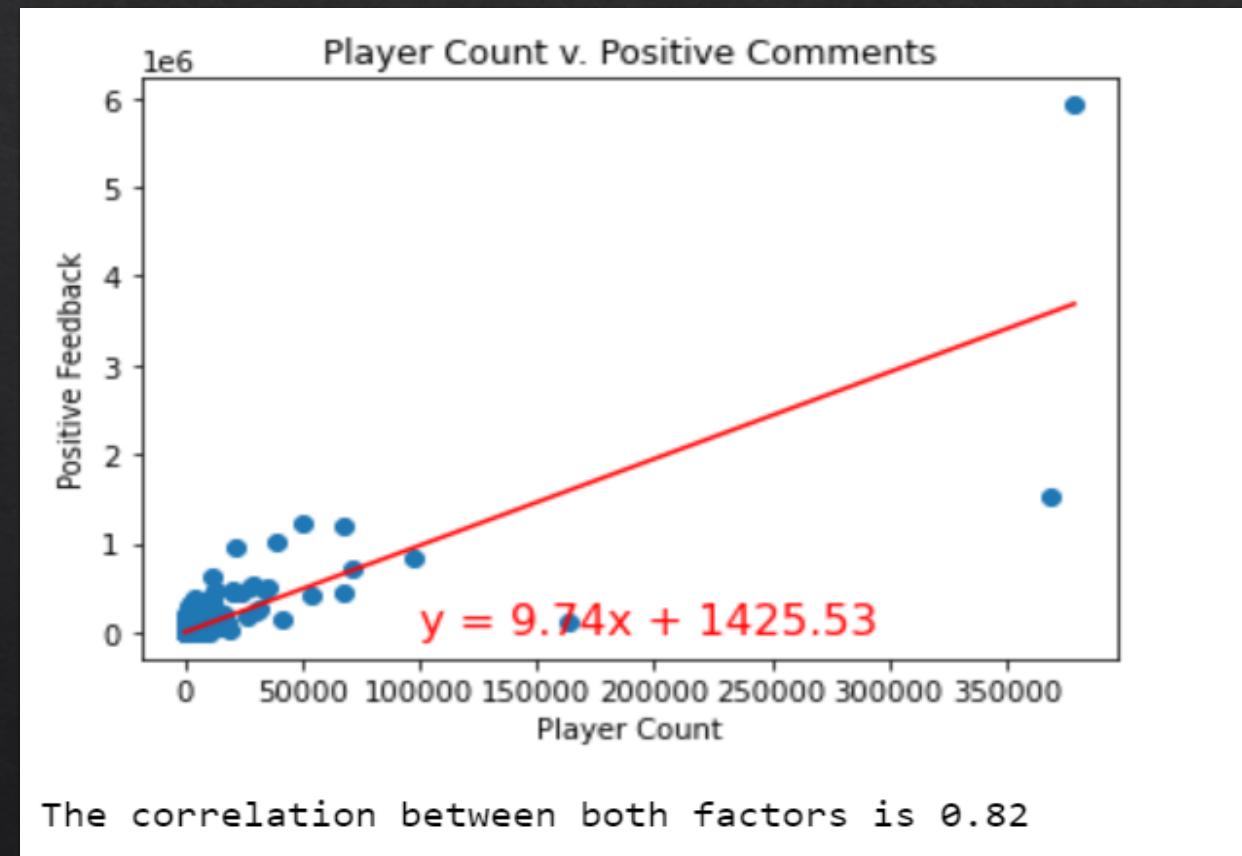
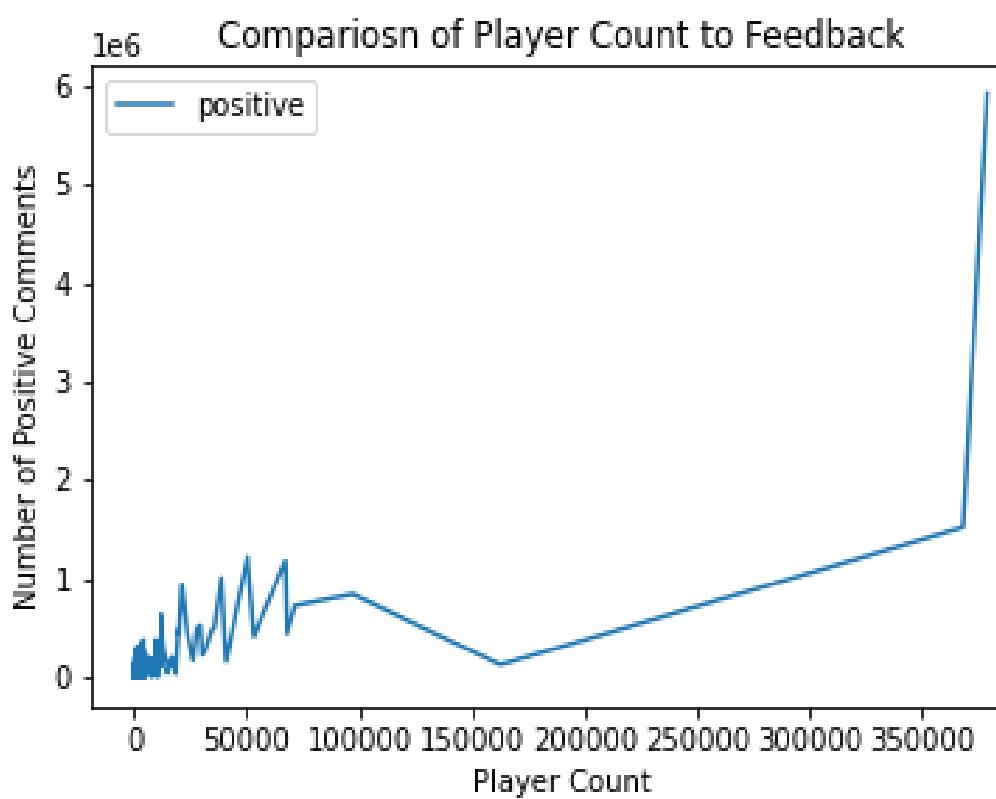
Do games with most players have the most play time?



By analyzing player count and average player time we found that having the most registered players does not result in having the highest player time. The correlation factor between player count and average player time is .05

# Comparison of Player Count to Player Feed Back

Do positive comments attract more players?

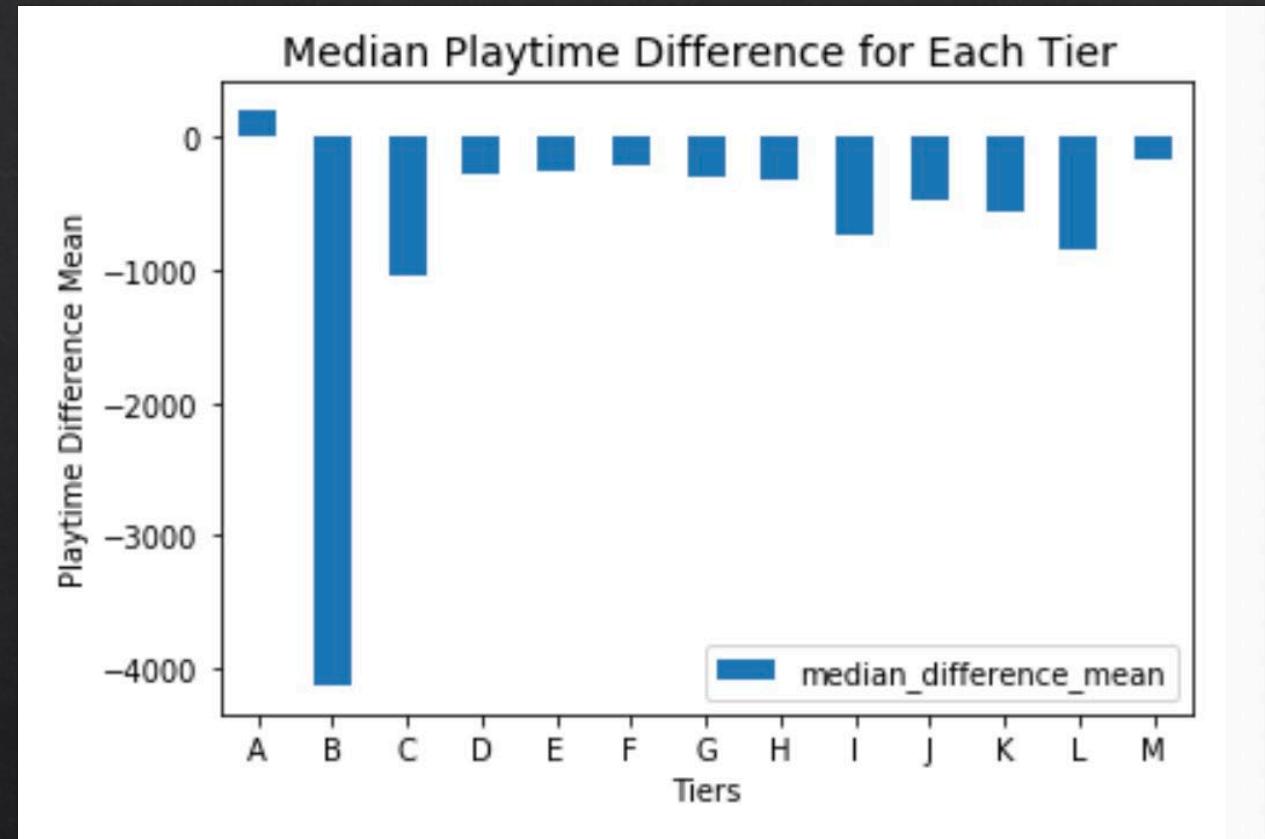


There is a positive correlation between player count and player feedback

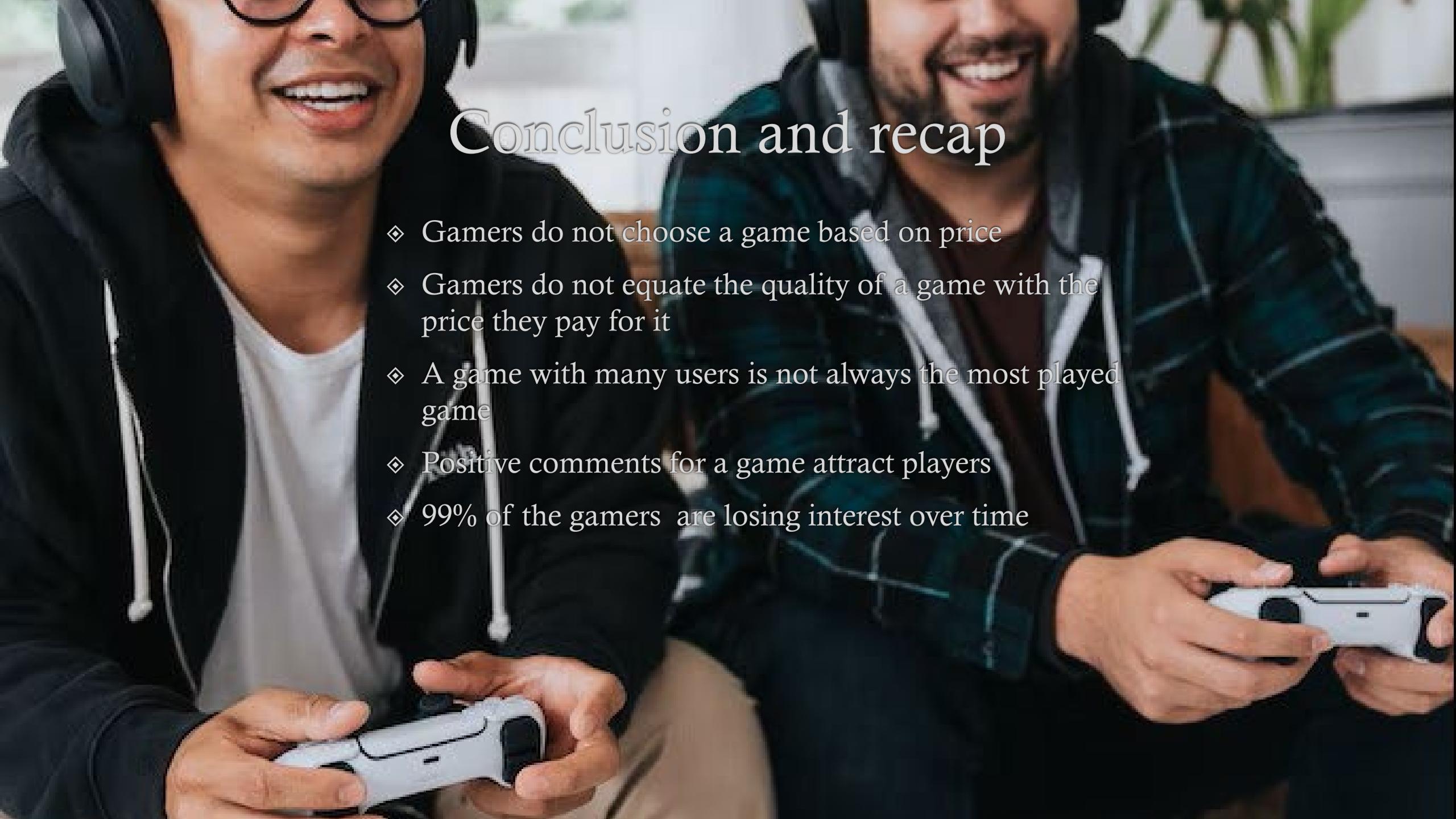
# Gamer Engagement Analysis

How engaged are players in the past 2 weeks?

Tiers	game_count	mean_price	median_difference_mean
0	A	1	0.00
1	B	4	10.00
2	C	17	9.80
3	D	31	8.74
4	E	68	16.14
5	F	230	15.95
6	G	320	16.39
7	H	495	12.78
8	I	957	10.41
9	J	1079	8.73
10	K	1567	8.18



There is no strong relationship between player count and median playtime difference  
There are 1% of the gamers increased median playtime in past two weeks

A photograph of two young men laughing and holding video game controllers. The man on the left wears glasses and a black hoodie, while the man on the right wears a dark green plaid shirt. They appear to be having fun playing a video game together.

# Conclusion and recap

- ❖ Gamers do not choose a game based on price
- ❖ Gamers do not equate the quality of a game with the price they pay for it
- ❖ A game with many users is not always the most played game
- ❖ Positive comments for a game attract players
- ❖ 99% of the gamers are losing interest over time