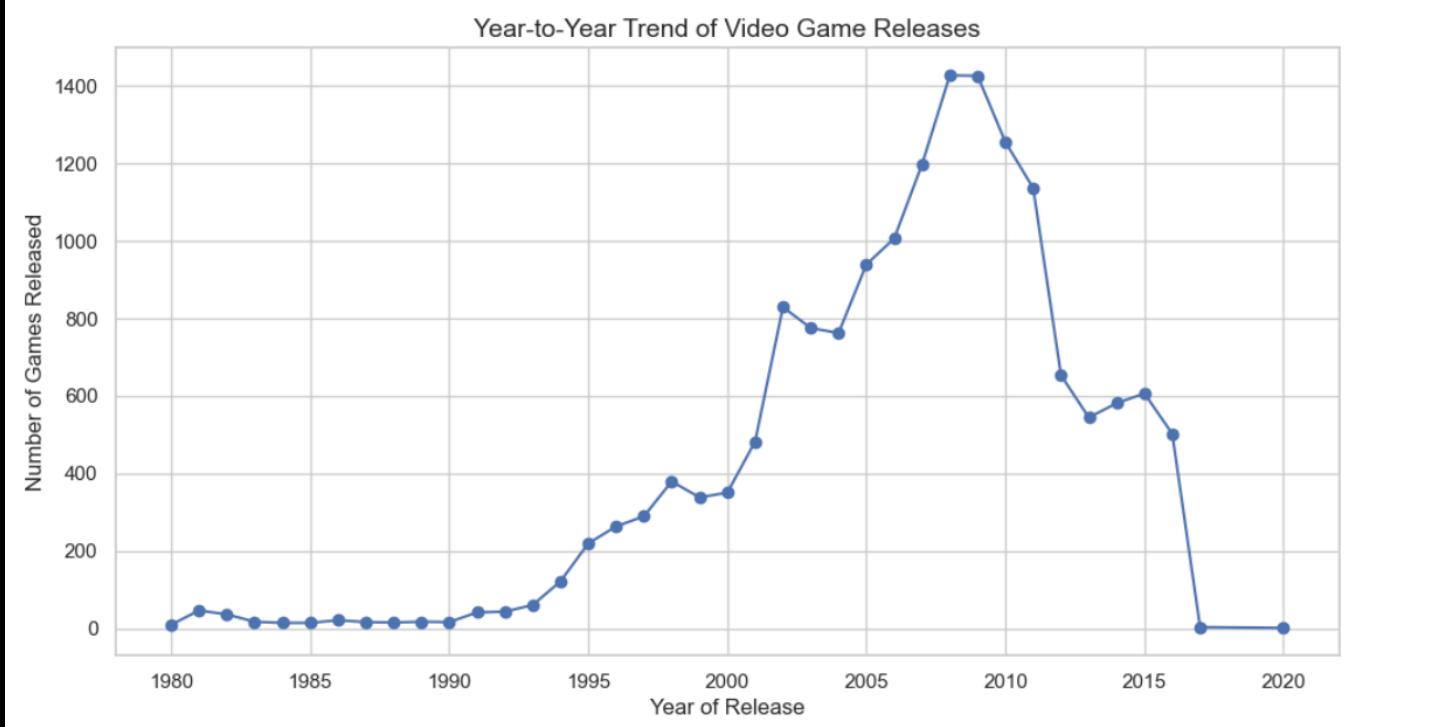


EXPLORATORY DATA ANALYSIS OF VIDEO GAME SALES

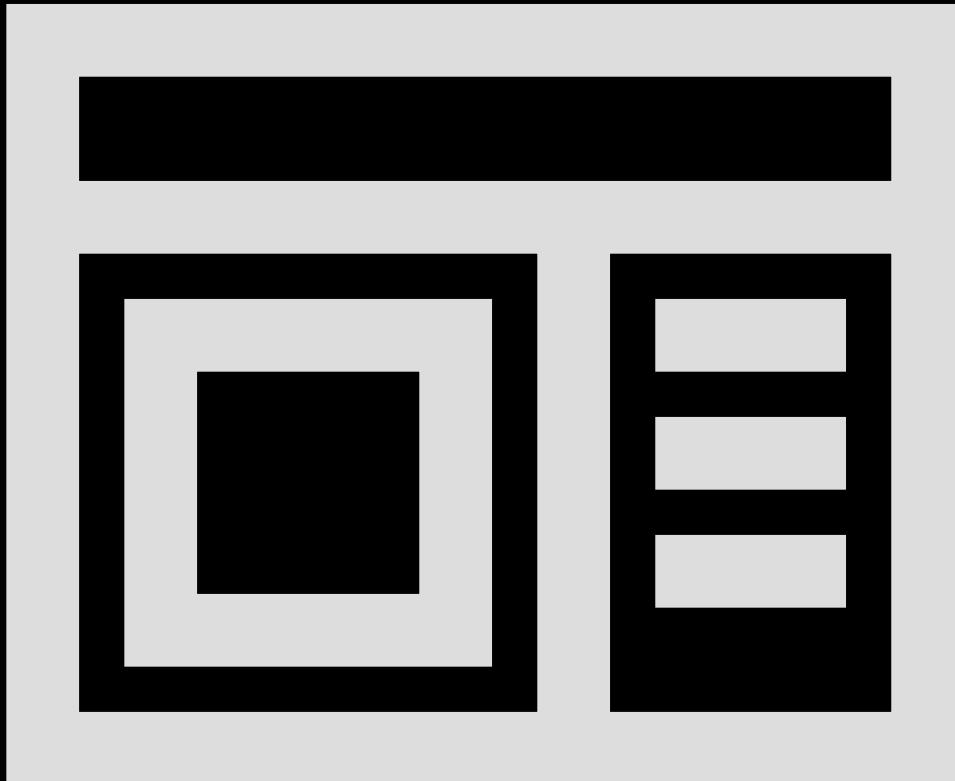


Temporal Patterns (Yearly Trends)

How Have Game Releases Changed Over Time?

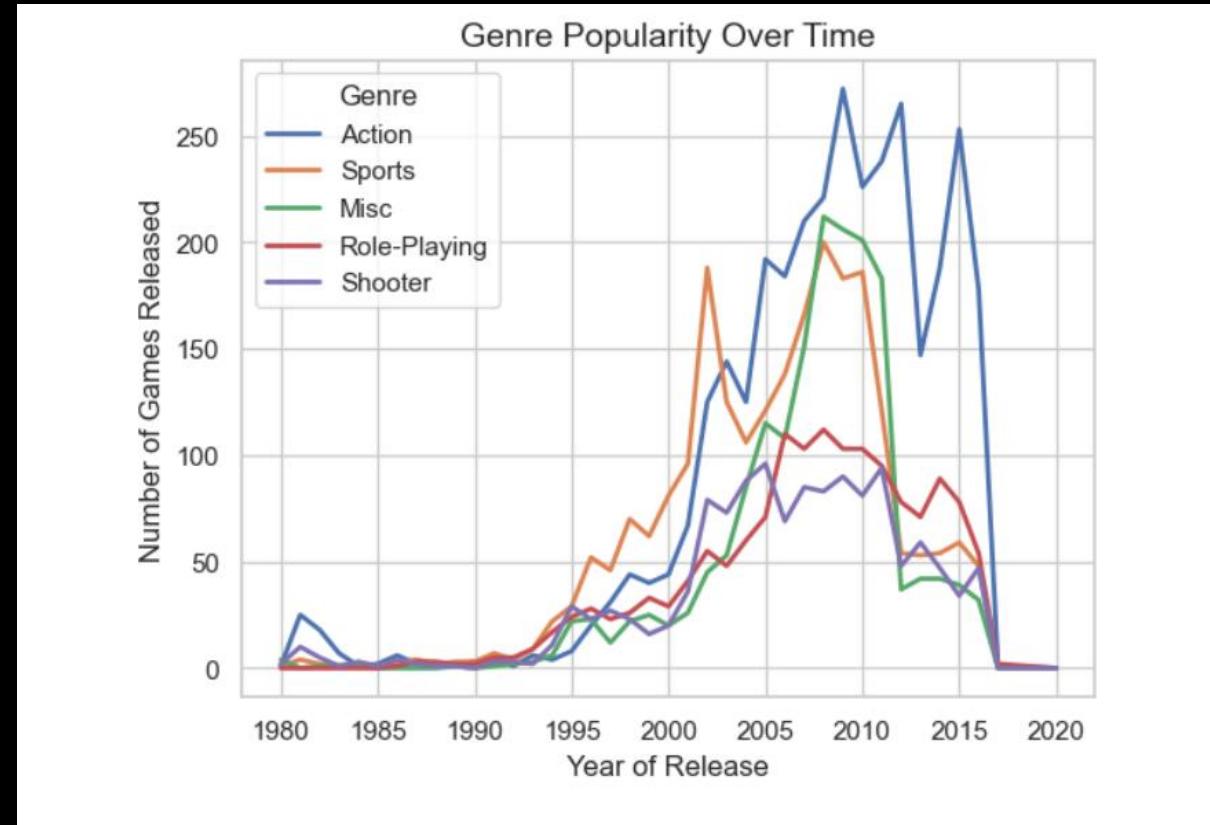


- Peak game releases happened between 2005-2010.
- Decline after 2010 due to higher development costs, digital sales, and mobile gaming rise.
- **Predictions:** The industry is shifting towards cloud gaming and live services.



Supporting Story

What Game Genres Do Players Prefer?



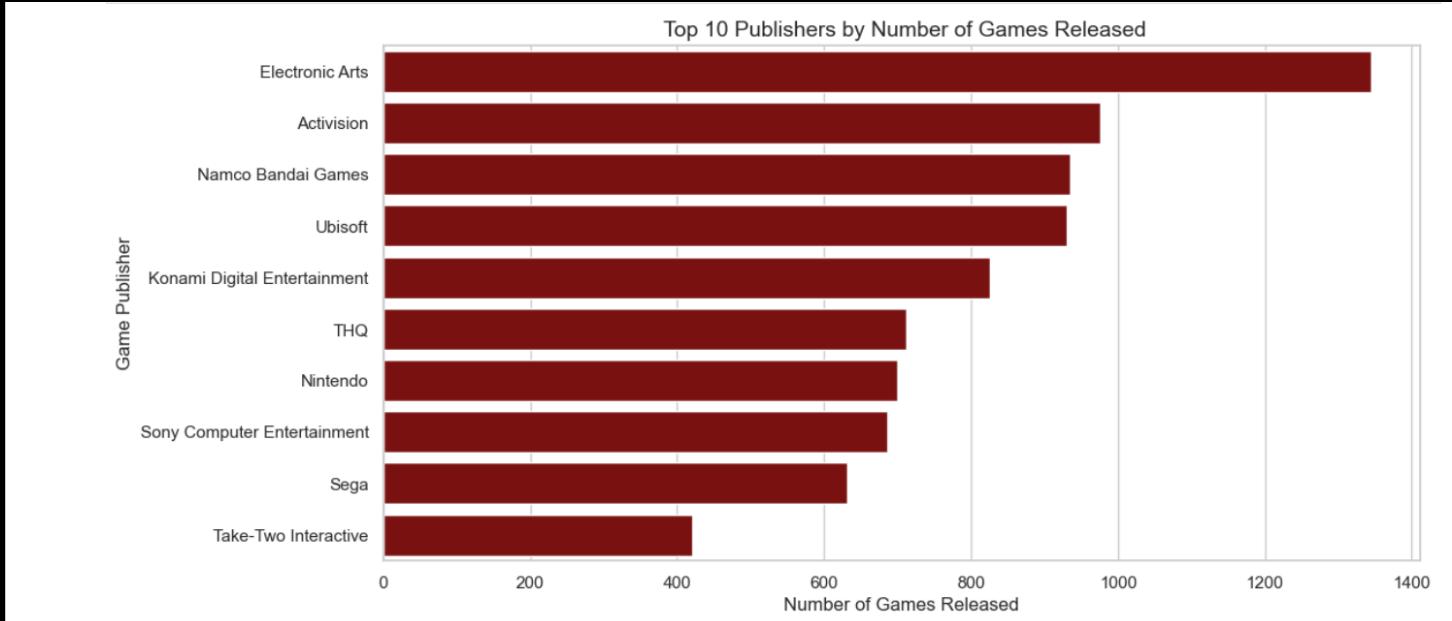
- Top 3 genres: Action, Sports, and Shooter games dominate sales.
- RPGs are more popular in Japan, while Sports & Shooters perform better in Western markets.
- Investment Recommendation: More focus on esports & online multiplayer games.

Where Are Games Selling the Most?



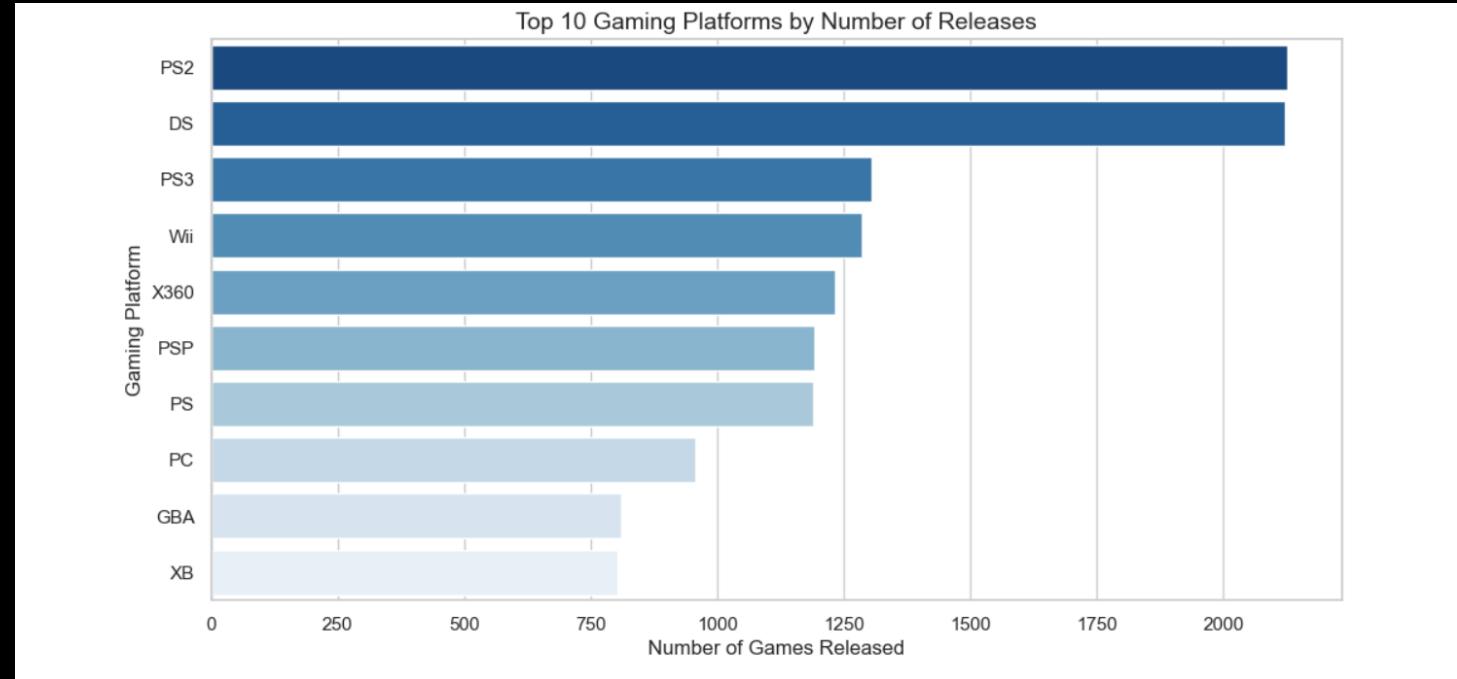
- North America leads in total sales, followed by Europe and Japan.
- Japanese RPGs have a strong domestic market, but Western games dominate globally.
- Business Recommendation: Localized marketing strategies for different regions

Who Are the Biggest Publishers?



- Predicting blockbuster games using ML models.
- Key Features: Genre, Platform, Critic Scores, Developer, Region.
- Potential Business Use Case: Optimize marketing budgets & sales predictions.

Which Platforms Have the Most Games?

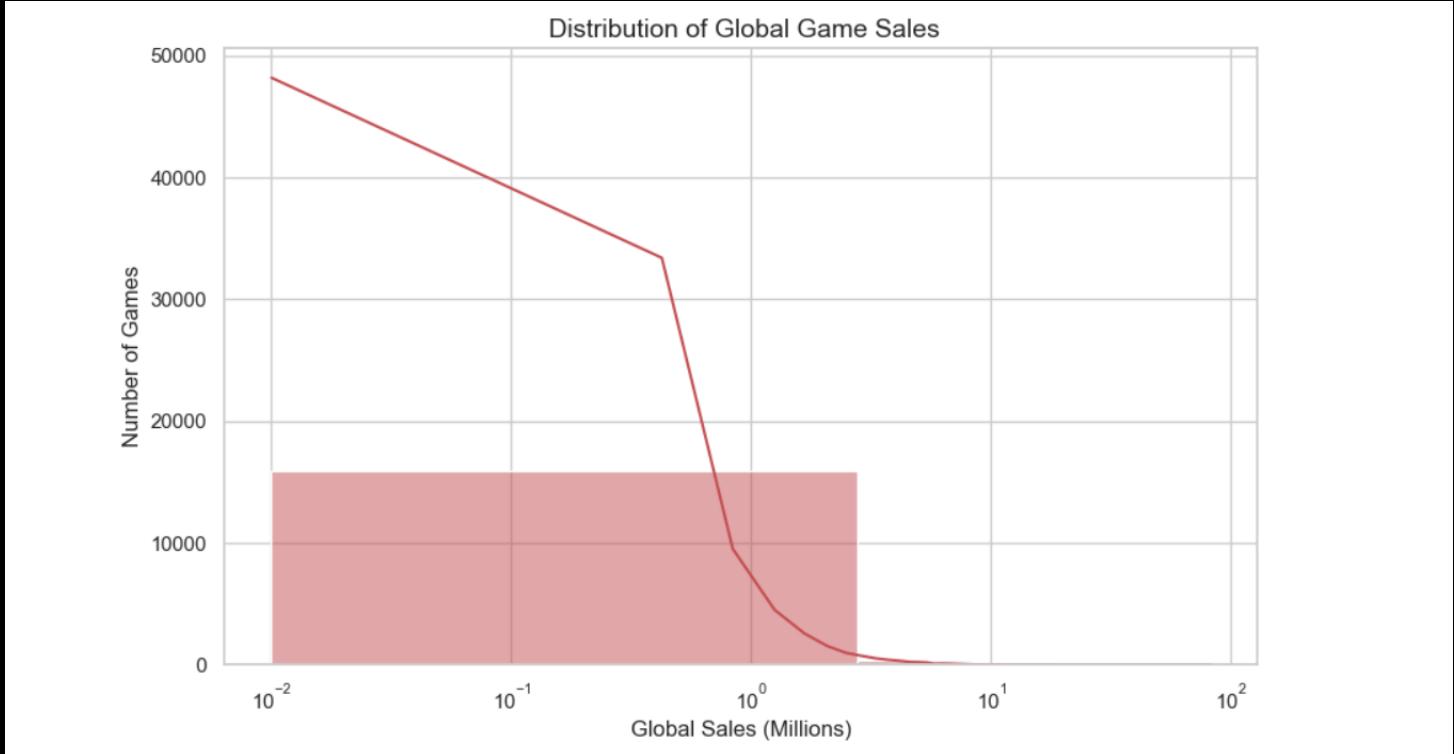


- PlayStation, Xbox, and Nintendo dominate game releases.
- PlayStation 2, Xbox 360, and Wii had the highest releases during their peak years.
- Future Outlook: PC & cloud gaming could be the next major platforms.



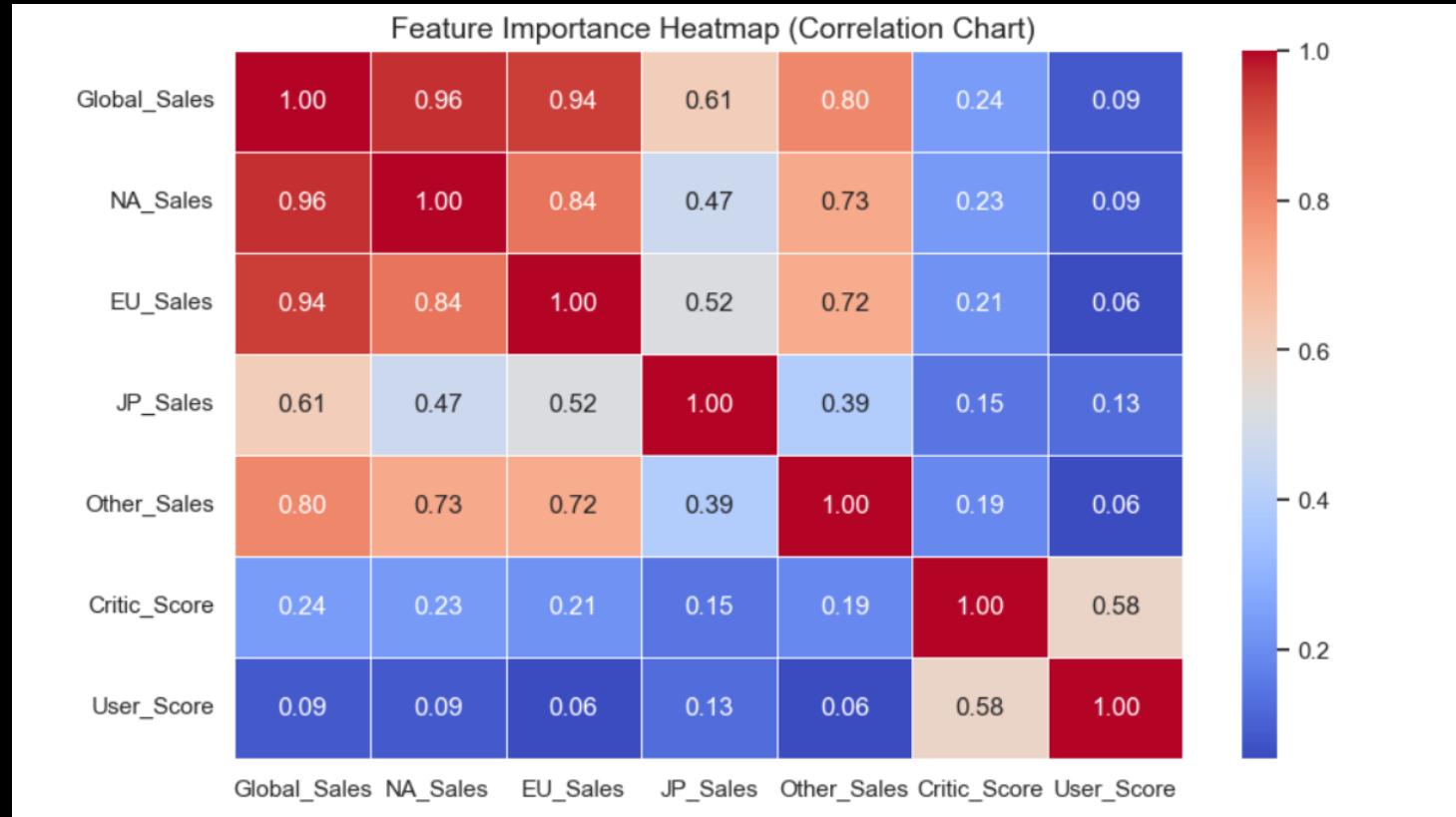
Machine Learning Perspective

Do All Games Sell Equally?



- **Sales are highly skewed:** Only a few blockbuster games dominate sales.
- **Majority of games have low sales,** but successful ones **bring in millions.**
- **Business Impact:** Focus marketing and investment on blockbuster titles.

Can We Predict a Game's Success?



- Regional sales are the strongest predictors of global success
- Critic scores have some impact, but user scores are less influential
- Japanese market behaves differently than NA/EU markets
- Potential Business Use Case: Optimize marketing budgets & sales predictions

Key Observations from the Heatmap

① Strong Correlation Between Global Sales and Regional Sales:

- NA_Sales (0.96), EU_Sales (0.94), and Other_Sales (0.80) are highly correlated with Global_Sales.
- Interpretation: This means regional sales drive overall global sales, and successful games perform well across multiple markets.

② JP Sales Has a Weaker Correlation With Global Sales (0.61):

- JP_Sales has a lower correlation compared to NA and EU Sales.
- Interpretation: Japanese games may have a more region-specific audience, unlike games that perform well globally.

③ Critic Score vs. Global Sales (0.24):

- There is a weak correlation between Critic Score and Sales.
- Interpretation: Higher-rated games do not always guarantee higher sales, suggesting marketing, branding, and genre play a bigger role in success.

④ User Score vs. Global Sales (0.09):

- User Scores have an even weaker correlation with sales than critic scores.
- Interpretation: A game can still sell well despite lower user ratings, possibly due to marketing hype, franchise value, or brand loyalty.

⑤ Critic Score vs. User Score (0.58):

- There is a moderate correlation between Critic Scores and User Scores.
- Interpretation: Games that critics rate highly tend to receive better user reviews, but the relationship is not absolute.

Business & Machine Learning Applications

Game Developers:

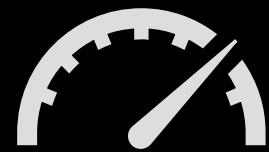
- Focus marketing efforts on regions with **high sales correlation (NA & EU)**.
- Consider **cultural preferences for Japan vs. Global markets**.

Marketing Optimization:

- **User scores do not strongly impact sales** → Prioritize branding and influencer marketing.
- **Critic scores are somewhat relevant but not the only factor.**

Machine Learning Models:

- **Can we predict a game's success?**
- A predictive model could use **Genre, Platform, Developer, and Critic Scores** to forecast **Global Sales**.



Dashboard



Click here to explore the interactive dashboard → [Interactive Dashboard](#)

Video Game Sales

overview

TOTAL GAMES

11,562

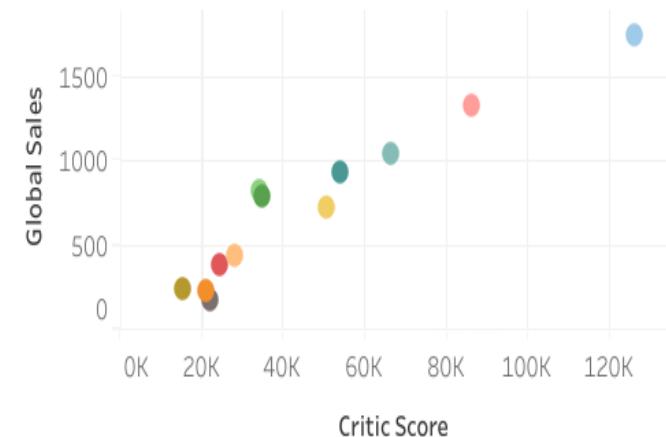
TOTAL PUBLISHER

581

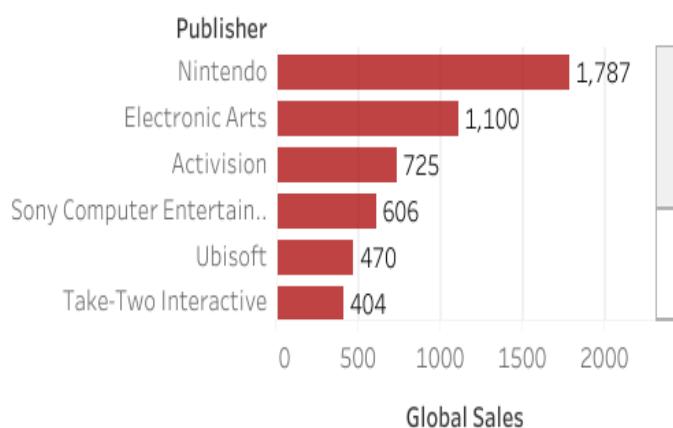
TOTAL GAME SALES

8,920

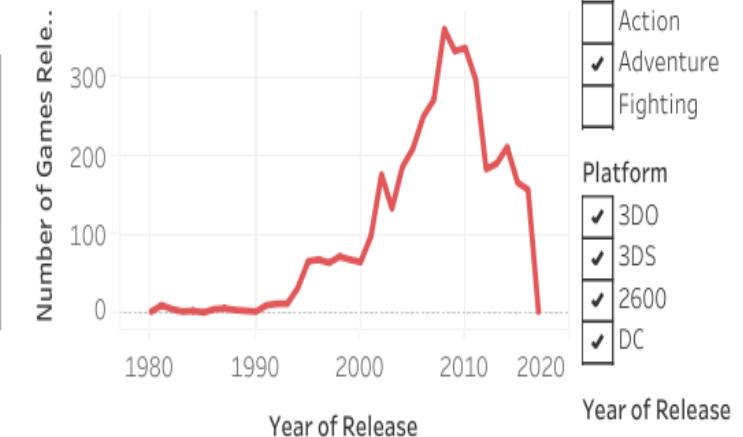
Critic Score vs. Sales



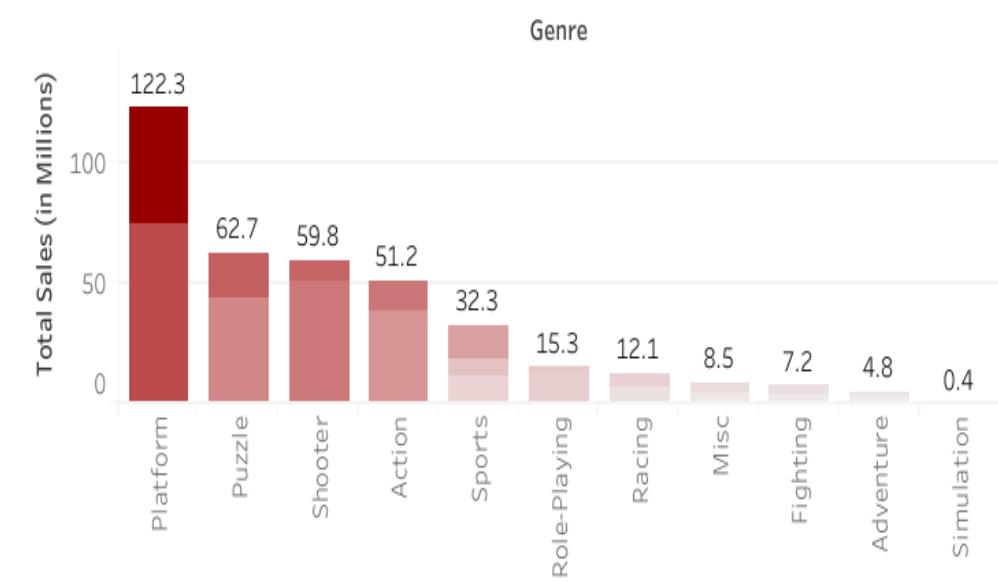
Top Selling Publishers



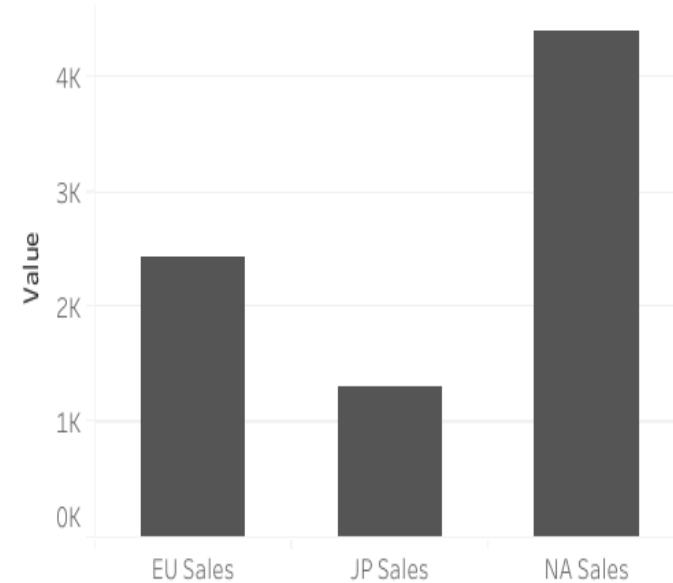
Game Releases Over Time



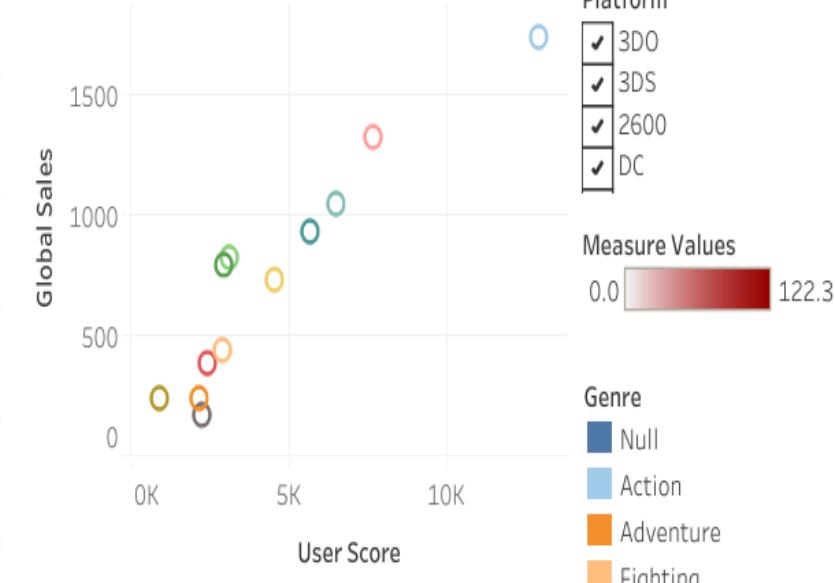
Genre Popularity by Region



Regional Sales Comparison



User Score vs. Sales



Genre
Null
Action
Adventure
Fighting

Platform
3DO
3DS
2600
DC

Year of Release
1980 to 1989

Platform
3DO
3DS
2600
DC

Measure Values
0.0 122.3

Genre
Null
Action
Adventure
Fighting