

Assignment Ggplot

Mondejar Tessa, Brusenina Maria

2023-11-04

Introduction

This documents aims at analyzing the sales of video games.

Presentation of the data

The dataset was taken from Kaggle and contains a list of video games realeased between 1980 and 2022 with sales greater than 100 000 copies.

The dataset includes 16 598 records and 11 columns:

- Rank - Ranking of overall sales
- Name - Game's name
- Platform - Platform of the games release (i.e. PC,PS4, etc.)
- Year - Year of the game's release
- Genre - Genre of the game
- Publisher - Publisher of the game
- NA_Sales - Sales in North America (in millions)
- EU_Sales - Sales in Europe (in millions)
- JP_Sales - Sales in Japan (in millions)
- Other_Sales - Sales in the rest of the world (in millions)
- Global_Sales - Total worldwide sales (in millions)

In the data there were missing values for games released after 2016, so the data set was filtered to show games released in 2016 or before. Other rows with missing data were removed too. The columns with sales were renamed by removing ' _Sales'.

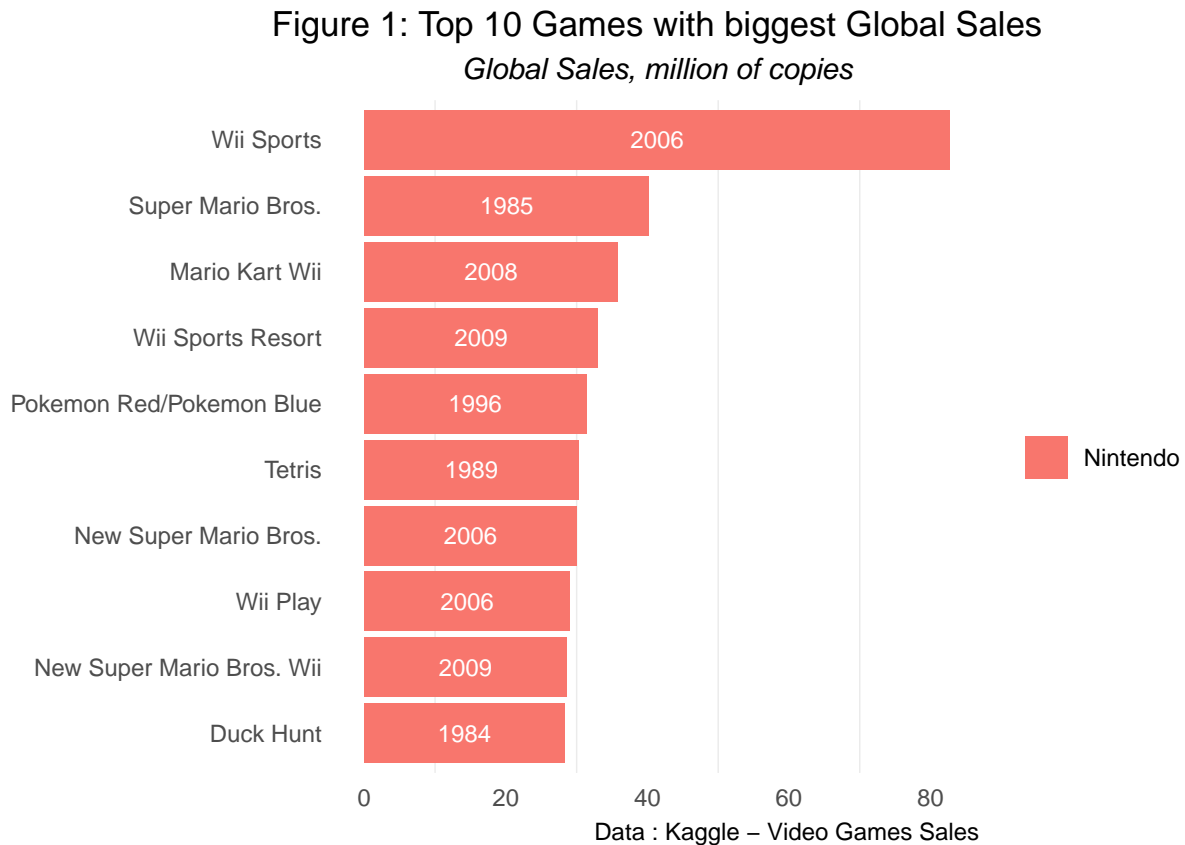
After cleaning there are left 16 323 records. The table below shows the first 5 rows of the cleaned data set.

Rank	Name	Platform	Year	Genre	Publisher	NA	EU	JP	Other	Global
1	Wii Sports	Wii	2006	Sports	Nintendo	41.49	29.02	3.77	8.46	82.74
2	Super Mario Bros.	NES	1985	Platform	Nintendo	29.08	3.58	6.81	0.77	40.24
3	Mario Kart Wii	Wii	2008	Racing	Nintendo	15.85	12.88	3.79	3.31	35.82
4	Wii Sports Resort	Wii	2009	Sports	Nintendo	15.75	11.01	3.28	2.96	33.00
5	Pokemon Red/Pokemon Blue	GB	1996	Role-Playing	Nintendo	11.27	8.89	10.22	1.00	31.37

As we can see from the first lines of our dataset, Nintendo seems to be an interesting case to study in this analysis. We will now deep dive into the top 10 games worldwide.

Top Games

Figure 1 shows top 10 games by global sales. Among numerous video games companies Nintendo is the undoubted leader having released all of the 10 best selling games.

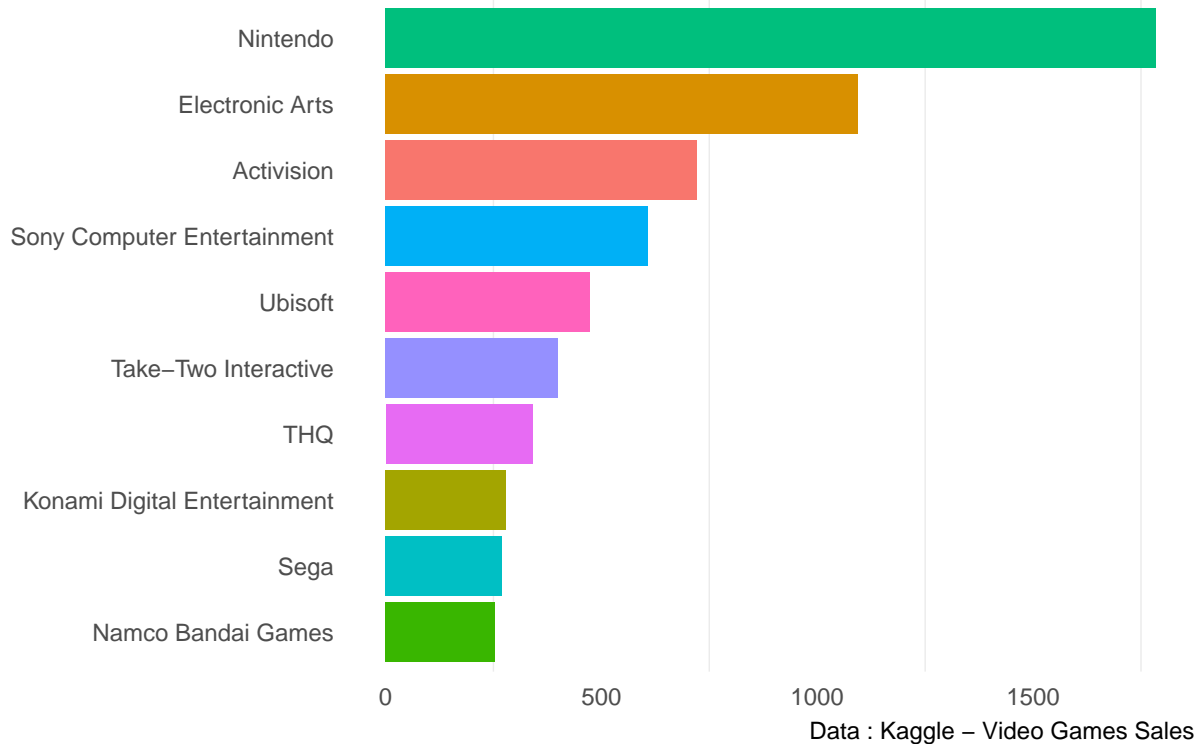


Nonetheless, we wanted to understand a bit better the environment of games publisher so we searched for the 10 best.

Top Publishers

Figure 2 shows top 10 video games publishers by global sales. The 3 biggest players on the video games market are Nintendo, Electronic Arts and Activision.

Figure 2: Top 10 Publishers
Global Sales, million of copies

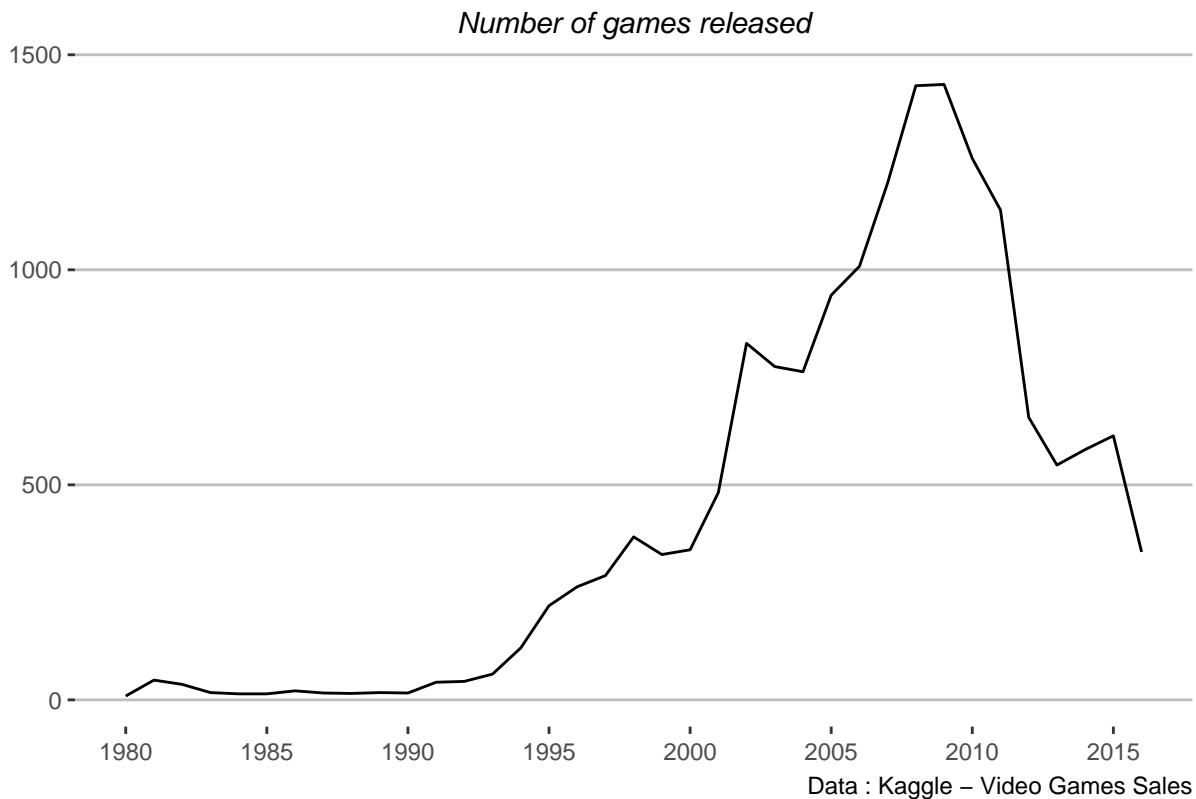


Now that we know the leaders, we looked at the number of games released through time.

Top Year

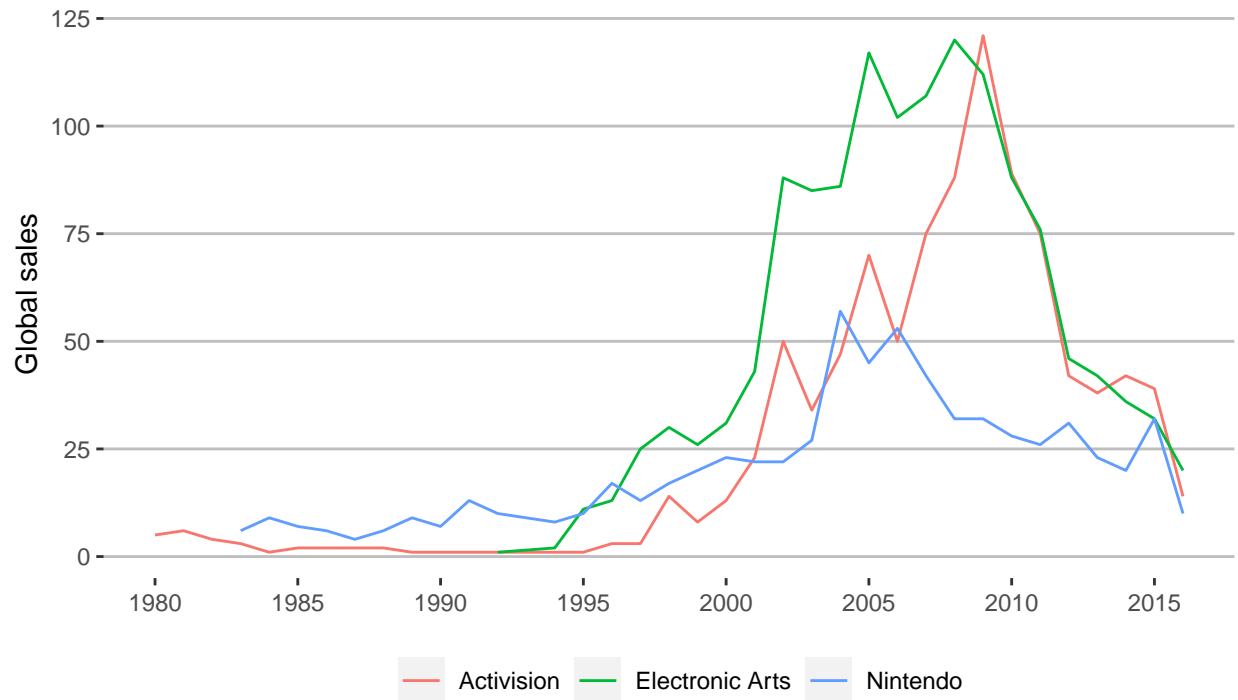
Figure 3 shows that from 1980 the number of games released grew gradually, peaked in 2009 at 1431 million and then decreased to 344 million in 2016.

Figure 3: The year with the biggest number of best selling games was 2009



Then we gave more depth to the research by comparing Nintendo's number of releases to those of its competitors. **Figure 4** shows the number of games released each year by top publishers Nintendo, Electronic Arts and Activision. It is interesting to notice that Electronic Arts and Activision followed the general trend with highest number of releases being around 2009, whereas Nintendo in general released significantly fewer games than its competitors with the peak in around 2004. As we previously saw, although Nintendo released fewer games it got bigger sales. We can assume that maybe Nintendo relied more on the quality of its games rather than quantity.

Figure 4: After 1995 Nintendo released fewer games than its competitors
Number of games released by publisher through time

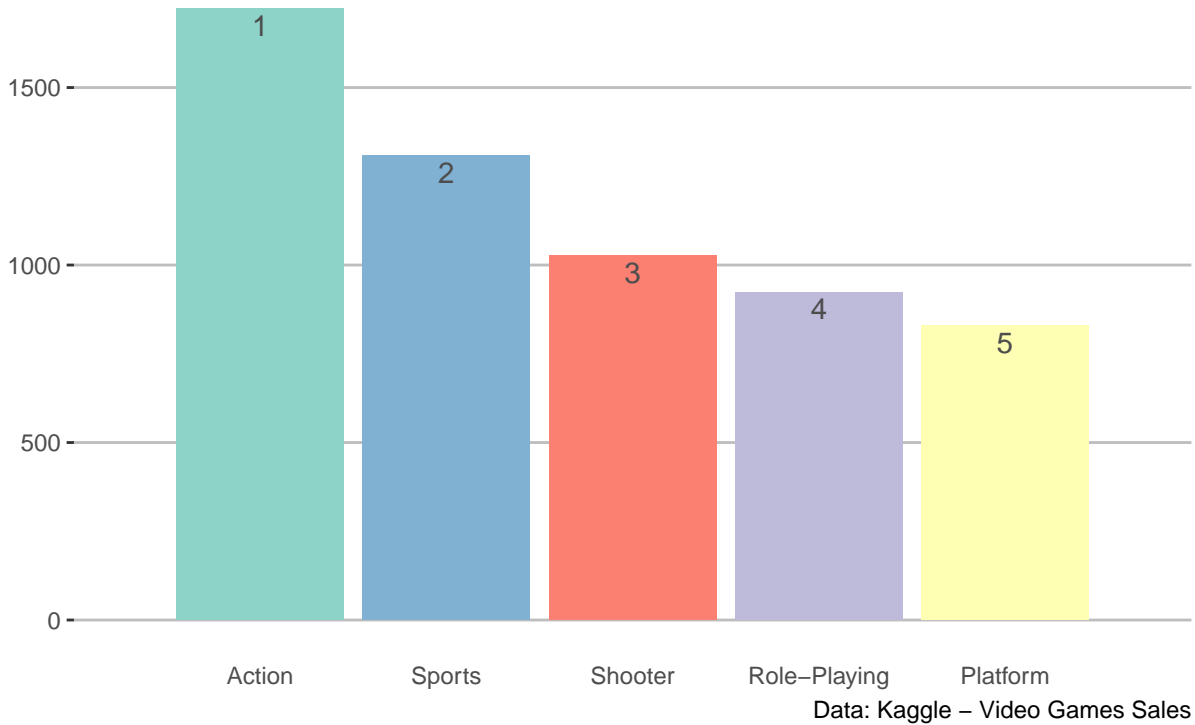


Data : Kaggle – Video Games Sales

Top Genres

Then we needed to find which genres are mostly chosen. **Figure 5** shows that most the genres with the most sales globally were Action, Sports and Shooter.

Figure 5: Action is the most popular genre of games worldwide
Global Sales by Genres, million of copies



It would be also interesting to see whether the preferences for genres are different in regions.

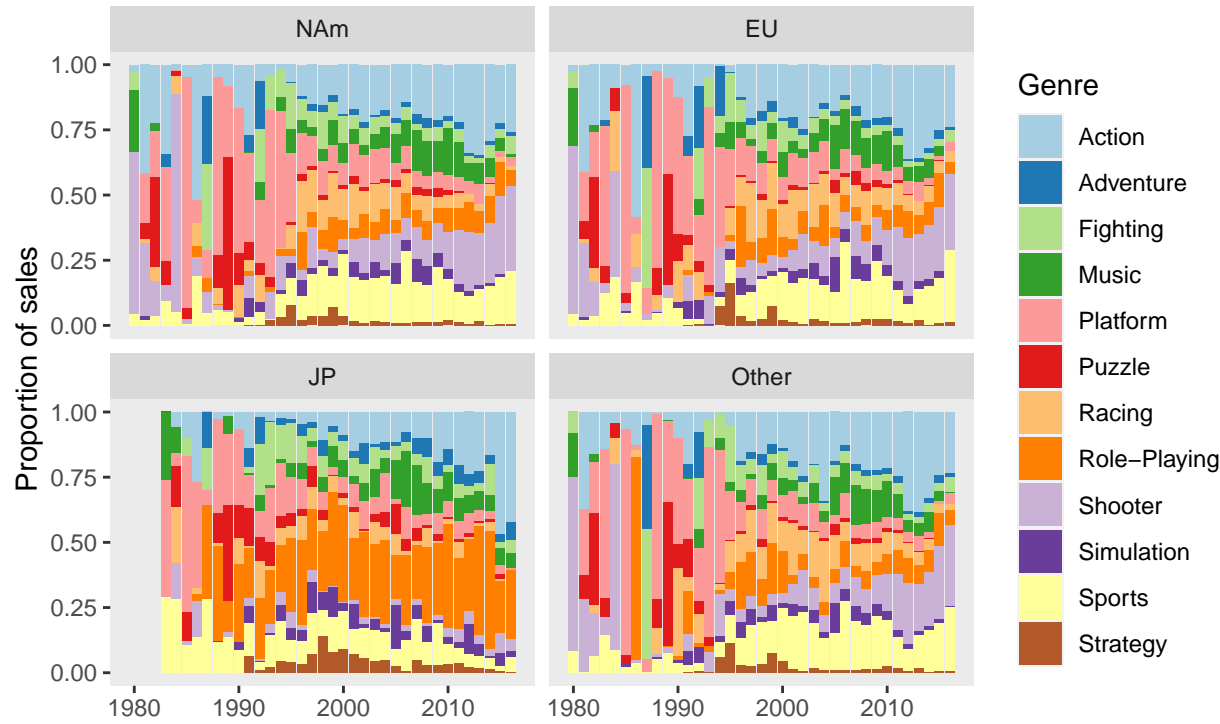
Genre Preferences by Region

By taking a look at the top 10 games in different region it is possible to notice that the most popular games in Europe are almost the same as the ones in North America, whereas Japan list of top games is not alike and is led by Pokemon games.

Rank	North_America	Europe	Japan
1	Wii Sports	Wii Sports	Pokemon Red/Pokemon Blue
2	Super Mario Bros.	Mario Kart Wii	Pokemon Gold/Pokemon Silver
3	Duck Hunt	Wii Sports Resort	Super Mario Bros.
4	Tetris	Nintendogs	New Super Mario Bros.
5	Mario Kart Wii	Grand Theft Auto V	Pokemon Diamond/Pokemon Pearl
6	Wii Sports Resort	Brain Age: Train Your Brain in Minutes a Day	Pokemon Black/Pokemon White
7	Kinect Adventures!	New Super Mario Bros.	Pokemon Ruby/Pokemon Sapphire
8	New Super Mario Bros. Wii	Wii Play	Animal Crossing: Wild World
9	Wii Play	Pokemon Red/Pokemon Blue	Brain Age 2: More Training in Minutes a Day
10	Super Mario World	Wii Fit Plus	Monster Hunter Freedom 3

As we saw major differences between Europe, North America and Japan we thought it would be interesting to see what genres were most popular throughout time. **Figure 6** shows how changed the structure of sales by genres in different regions. The trends of video games in North America and Europe are alike. Platform and Puzzle games were the most popular in the 1980s and 1990s and then were replaced by Shooter, Action and Sports in the 2000s and 2010s. Whereas Japan has different pattern with Role-playing genre keeping its popularity through the years and Sports steadily losing the favor of the players.

Figure 6: Structure of annual Sales by Genre in Regions



Data : Kaggle – Video Games Sales