

New! Select "Design your profile" in the menu to create a personalized space.

Got it

Yash Khandelwal



About

Video Game Sales — Exploratory Data Analysis

 **Yash Khandelwal** Just now · 7 min read

For decades, video games have been a very popular way for individuals to escape their reality or bond with friends. The data set used in this exploratory data analysis consists of sales of particular video games between the years 1980–2016, the publishers, genres, and the sales in regions such as North America, the European Union, Japan, and other regions. For this particular analysis, I chose to focus simply on North America, the European Union, and global sales. Therefore, columns such as the sales in Japan and other regions were removed. Additionally, any video game that has zero sales in either North America or the European Union was removed from the data set as that meant the video game was never available for purchase in those regions.

In order to guide this analysis, I created 3 hypotheses that were followed by questions. The three hypotheses are:

- I. I hypothesize that there is a correlation between the genre of video game and the number of sales within the NA and EU region
- II. I hypothesize that the platform Xbox360 has brought in the most revenue globally
- III. I hypothesize that Nintendo is the best selling publisher globally as they have had very popular gaming systems

Before going into the hypotheses, I analyzed the adjusted data set through various graphs. The first graph is shown below, which is a time-series displaying the global sales of video games from 1980–2016. It was very interesting to see how video game sales increased significantly from 2008–2009. Seeing this led me to the potential discovery of how the recession may have led to the rise in video game sales as many individuals had no jobs and stayed home. The data also brings about the idea that the video game industry may be recession-proof.

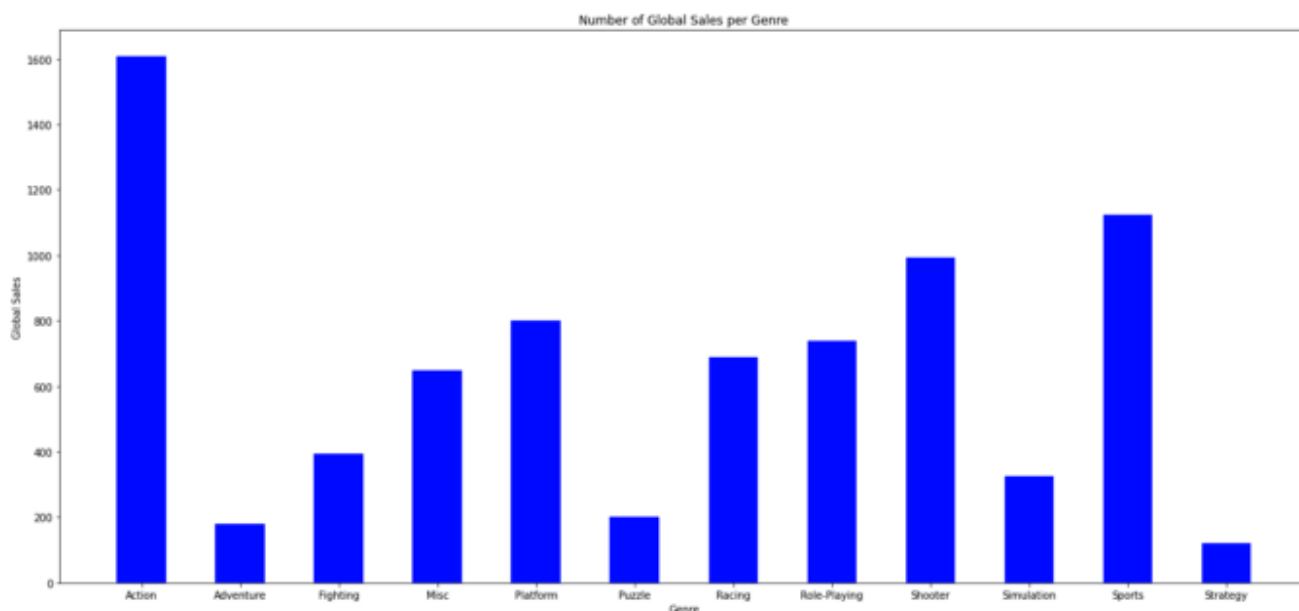


Seeing the graph above led me to ask the question, how did the sales in North America compare to the sales in the European Union during the same period? The graph below of the regional sales shows how the sales in the European Union are lower than the sales in North America. However, the video game sales in both regions follow the same pattern with a spike in 2008. Sales in both regions also saw a sharp decline after 2008.





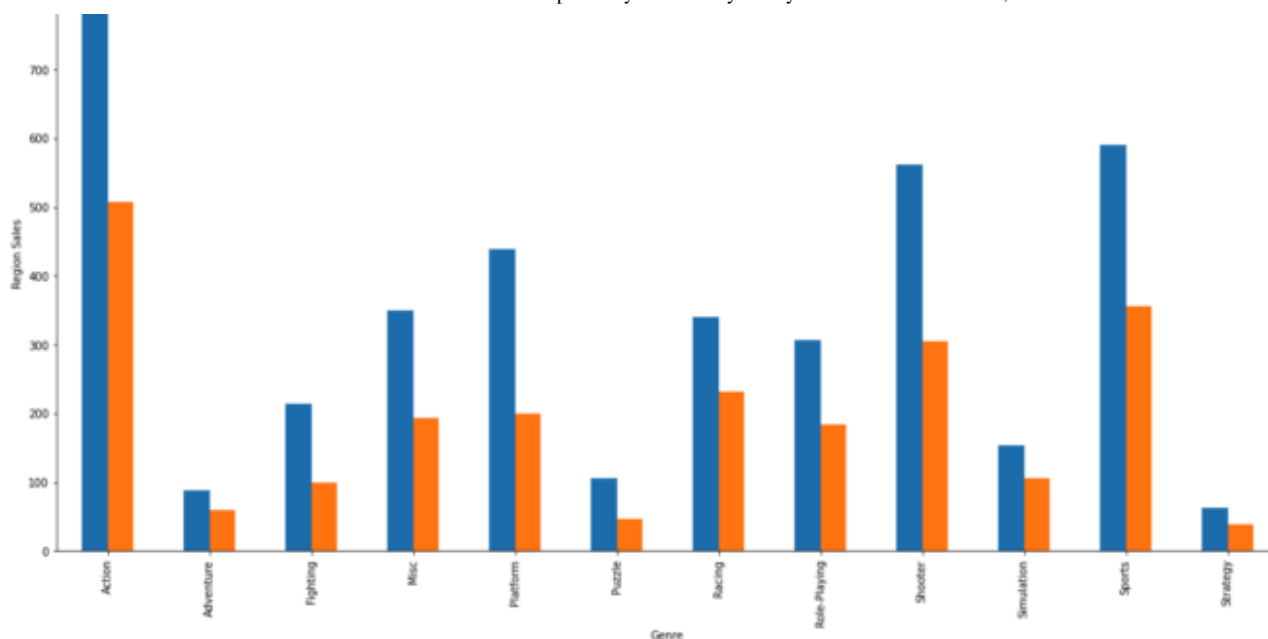
Following this analysis, I began to ask the question, what genre of video games do individuals prefer to buy? Through the graph, I was able to see that globally, many people prefer to buy action video games with sports games following. This is an important insight for publishers as it shows them what types of games they should create in order to maximize their sales.



I. I hypothesize that there is a correlation between the genre of video game and the number of sales within the NA and EU region

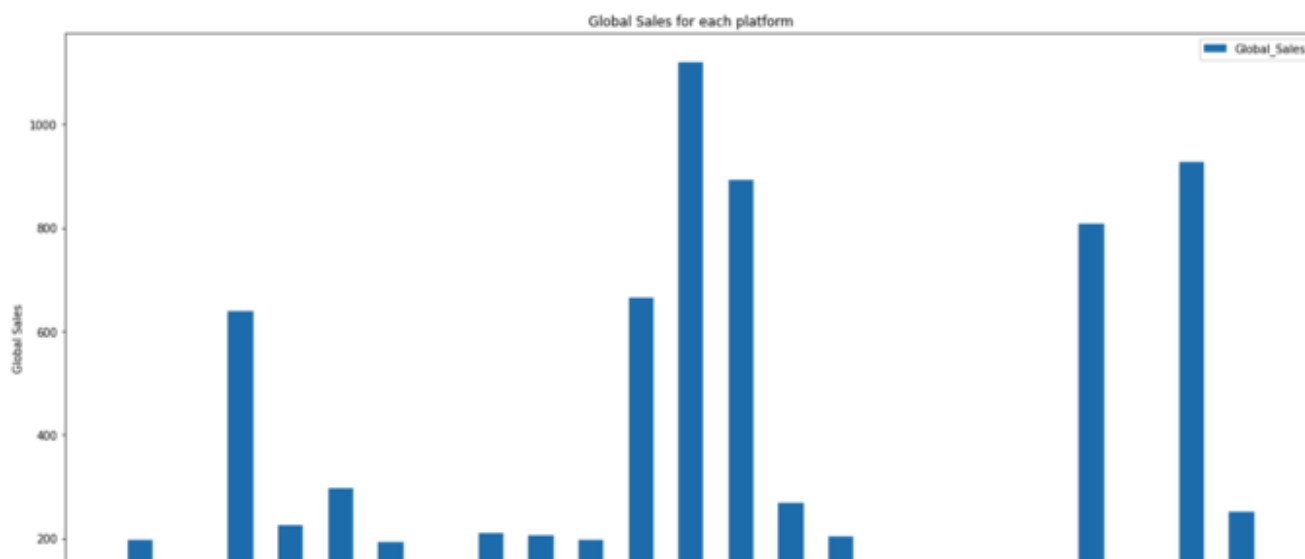
Seeing the favored genre globally led me to this hypothesis as well as asking the question, is there a genre favored more in one region than the other? After analyzing the graph, my hypothesis was proven wrong as the sales by genre in North America were similar to the sales by genre in the European Union. I had assumed that each region may have different preferences, which would then affect the sales, but that was not the case. Both regions prefer action video games and sports games following.

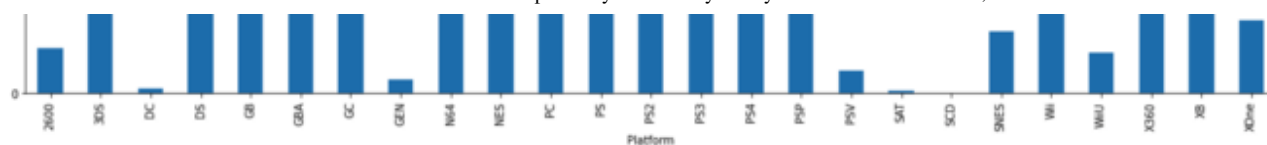




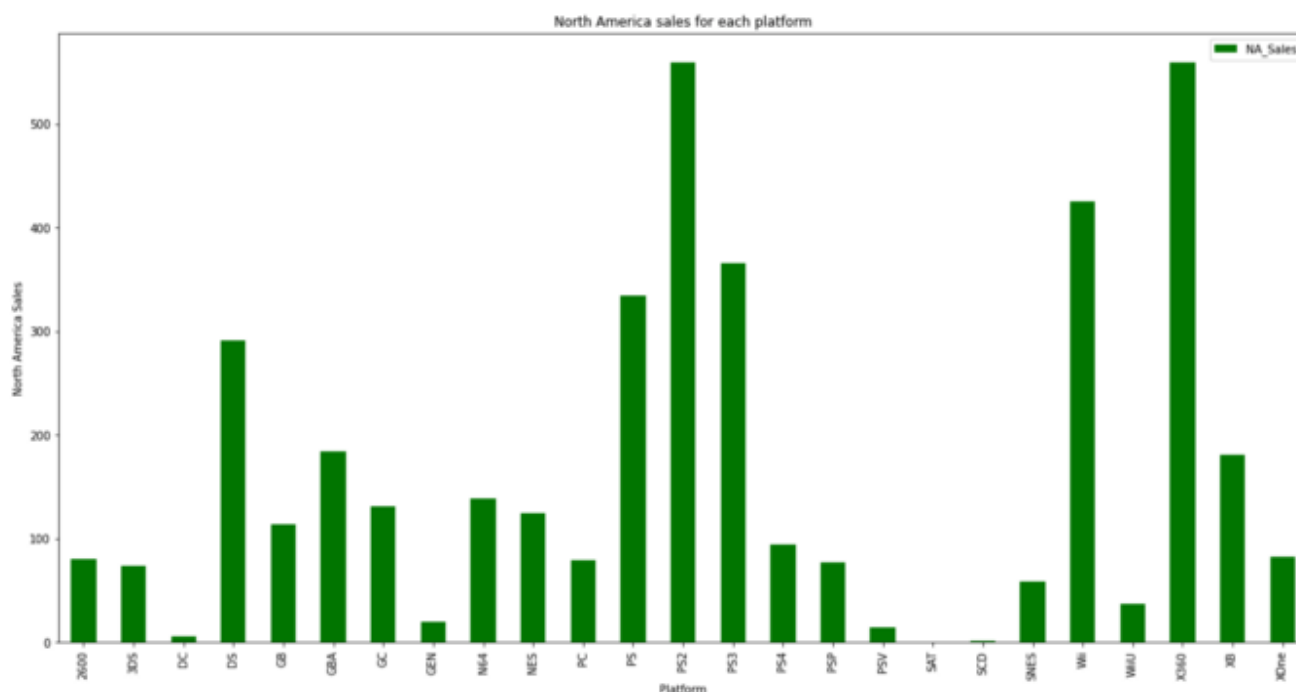
II. I hypothesize that the platform Xbox360 has brought in the most video game revenue globally

For publishers to maximize their revenue it is important to know what platforms they should make video games for, therefore, which platform has brought in the most revenue? The answer to this question according to the graphical representation is the PS2, therefore, proving my hypothesis false. The Playstation 2 was a very popular gaming system, so it makes sense as to why it brought in the most video game revenue globally. However, the Xbox 360 had the second most video game sales.



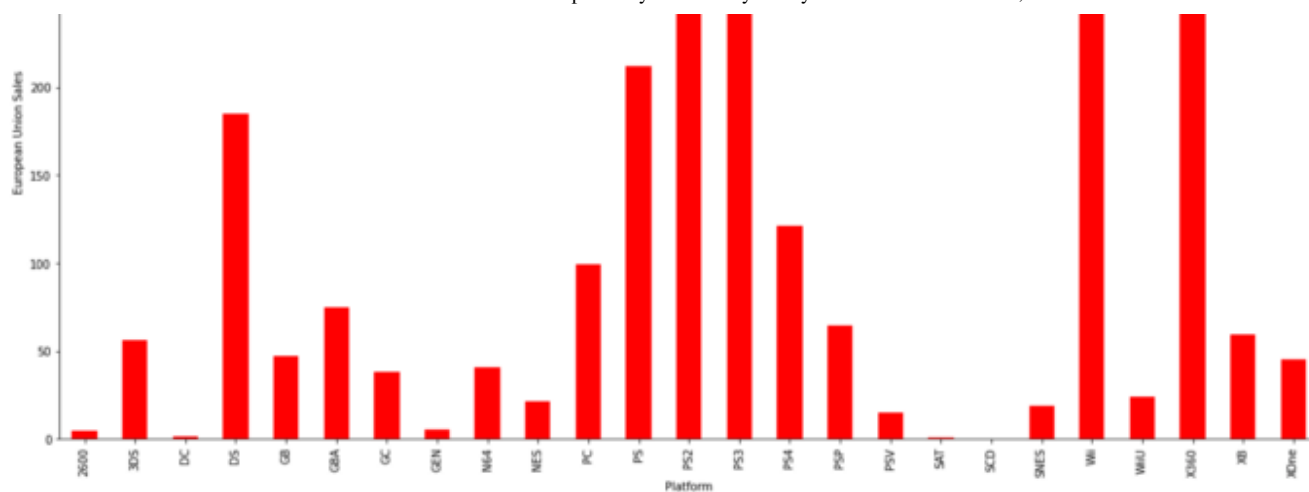


I then wanted to pursue the questions, which platform had the most video game sales in North America? In order to do this, I focused on the data for the North American sales rather than the global sales. Judging from the graph below, one can see that the Xbox 360 had the most video game sales and was closely followed by the Playstation 2. There was actually a .33 difference between the sales of the PS2 and Xbox 360.



After seeing how globally the PS2 had the most video game sales and in North America the Xbox 360 had the most video game sales, I wondered which platform in the European Union had the most? It turns out that the platform with the most in the EU was the PlayStation 3. Coming in second highest was the Playstation 2, which was similar to North America. These graphs are important because they indicate which platforms are the most popular in each region indicating which platforms publishers should be making video games for.

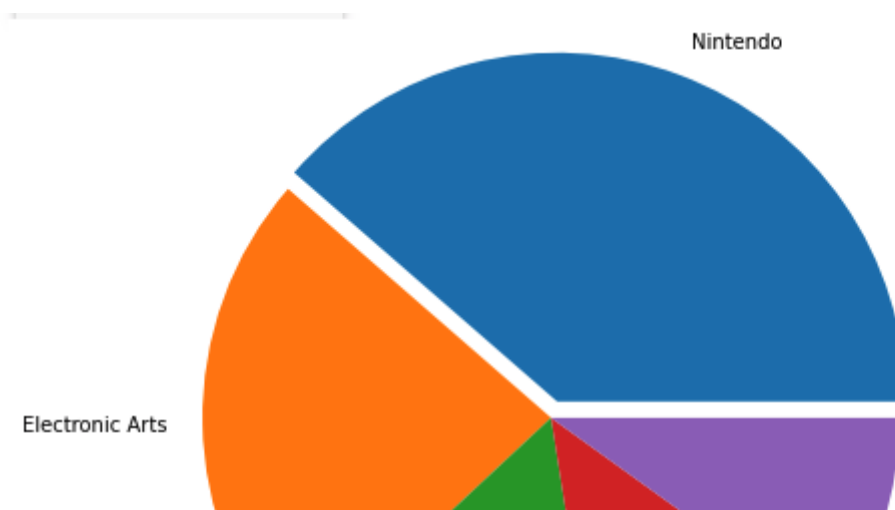


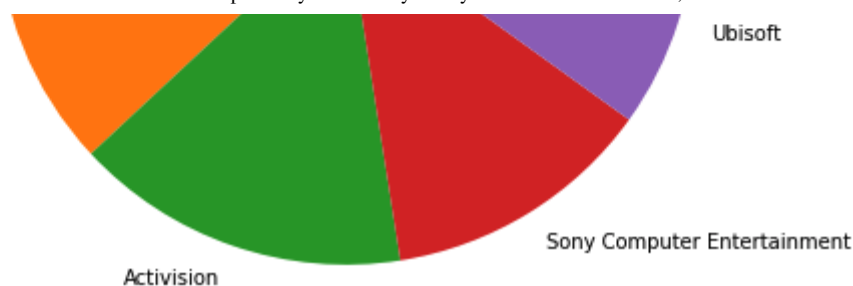


III. I hypothesize that Nintendo is the best selling publisher globally as they have had very popular gaming systems

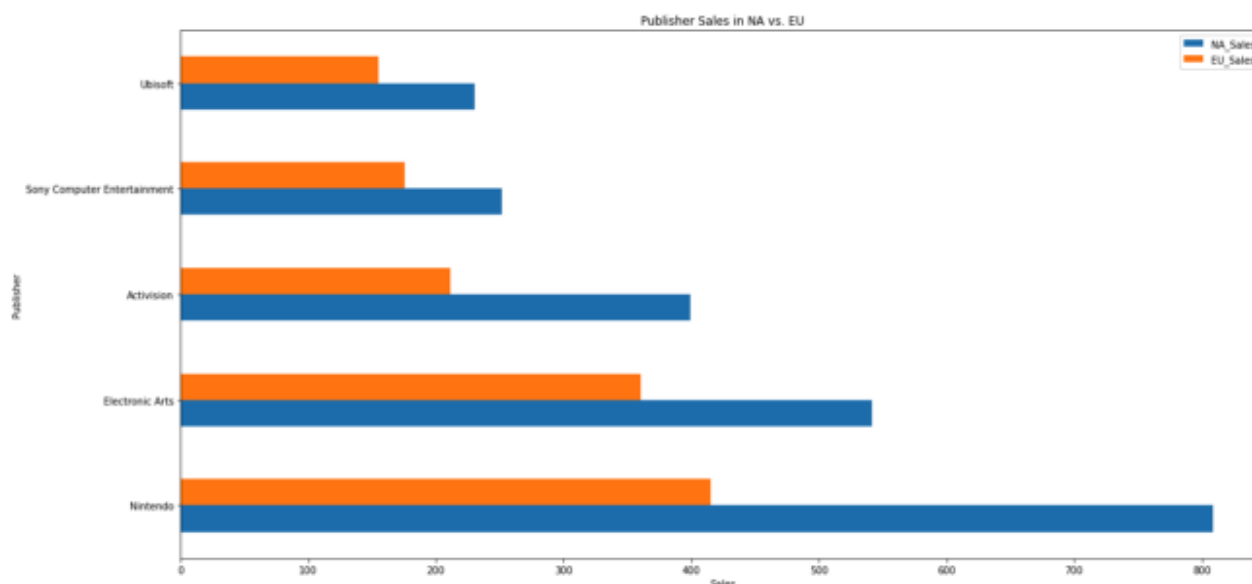
This last hypothesis was created through my question of which of the publishers had the highest amount of video games bought globally? Since there were so many publishers, I decided to reduce the data and only list the top 5 publishers in terms of the number of sales. Then I created a pie chart of the 5 publishers in order to show their respective sizes compared to each other as shown below. Nintendo is the biggest publisher followed by Electronic Arts, Activision, Sony Computer Entertainment, and Ubisoft. Compared to the other publishers, Nintendo has a huge share of the sales and therefore proves my hypothesis.

Top 5 Publishers in Terms of Global Video Game Sales





After viewing the publisher with the most global video game sales I asked myself which of the five publishers had the greatest number of sales in North America and the European Union? Judging from the graph below, I was able to infer that in both regions they follow the same order. Nintendo still has the most video game sales. However, this discovery did confuse me at first because in both regions no Nintendo platforms are the most popular. Then I realized that Nintendo has had many popular platforms out for decades now like the Gameboy, DS, and Wii.



Summary of analysis

For the most part, video game sales in both regions, North America and the European Union were fairly similar. Although sales in the EU were lower, they followed the same pattern as NA. This pattern is interesting to see as video game sales peaked during the Great Recession and have been decreasing ever since then. It was also interesting to see the different preferences that each region had and also globally. For example, North America favored the Xbox 360 platform, the European Union favored the Playstation 3, and globally the Playstation 2 was favored. Moving on, I was shocked to see how similar

the genre preferences were in both North America and the European Union. Both regions favored action video games the most, but I would have assumed that the EU would have favored sports games more as they have a huge culture for that. Lastly, when analyzing which publisher has had the most sales, it was amusing to see that a publisher, Nintendo, who does not make games for either of the popular platforms in both regions had the highest video game sales.

What do the data suggest?

Being able to analyze data is an important skill as it provides an opportunity to learn more about different aspects of a business and take action to improve your business. From this data analysis, it is clear that publishers should focus on creating games for certain platforms in different regions. For example, in the EU, publishers may want to focus on creating video games for the Playstation 3, and for North America, they may want to focus on video games for the Xbox 360. Additionally, the global preference in terms of genre is action video games. Seeing this, publishers can focus their efforts on creating action games to maximize their amount of sales rather than focusing on puzzle or strategy games. Lastly, it is evident that video game sales have been falling since 2008, which gives publishers insight that the trend of the market is changing. Many individuals have begun to switch over to mobile or internet gaming and so publishers can discover this trend and shift their focus to create those types of games for consumers.

[About](#) [Help](#) [Legal](#)

Get the Medium app

