Sentiment Analysis with data from Twitter For Gaming Consoles (Ps5, Xbox Series X, Nintendo Switch)

Introduction

In this report we will present to you a sentiment analysis on tweets relative to three different high selling gaming consoles (PS5, Xbox Series X, Nintendo Switch), collected in a period of twenty days.

Methodology

We started with creating a twitter developer account so we can use APIs to extract our text data from twitter. Then we designed a database via MySQL (to locally save our data), contained the account name, the number of followers, the number of account's total tweets, the tweet, how many likes tweet gets, the date and the time that tweet created, the location of the user twitting, the hashtags he or she used and the sentiment of the tweet.

After created our data, our next step was to extract 3000 (1000 relative to each gaming console) tweets from twitter filtered not to include duplicates. The method we follow, harvested tweets in real time, so for fifteen days (27/01/2021 – 11/02/2021), we collected around 200 tweets per day excluding retweets. Our data is collected according are key hashtags #PS5, #XBOXSERIESX, #NINTENDOSWITCH. In addition, we had to clear our tweets from emojis, urls, special characters etc. regular expressions.

Furthermore, we used TextBlob library to classify every tweet as positive, negative or neutral, based on its polarity. Finally, after collecting all the data required, we analyzed them and created graphs to present to you our findings.

Results

In this section we will present to you our findings based to our dataset.
Starting with our first graph, a pie chart in which present the percentage of the sentiment polarity about the whole dataset. Giving a picture of what people think about these three competitive gaming consoles in general.

Pie chart about the sum of the dataset

Then we created a Word Cloud (excluding not relevant words, like pronouns) that his purpose is to show us the most frequent words found in our dataset. The most common the word is the bigger looks in our graph. However, the less frequent it will appear with a smaller font.

Word Cloud with the most frequent words

The third graph we designed is a side-by-side percentage bar plot that shows the sentiment of the tweets for each of the three gaming consoles. This provides us an overview comparison for the sentiment of every gaming console.

Side by side percentage bar plot with the polarities for every gaming console
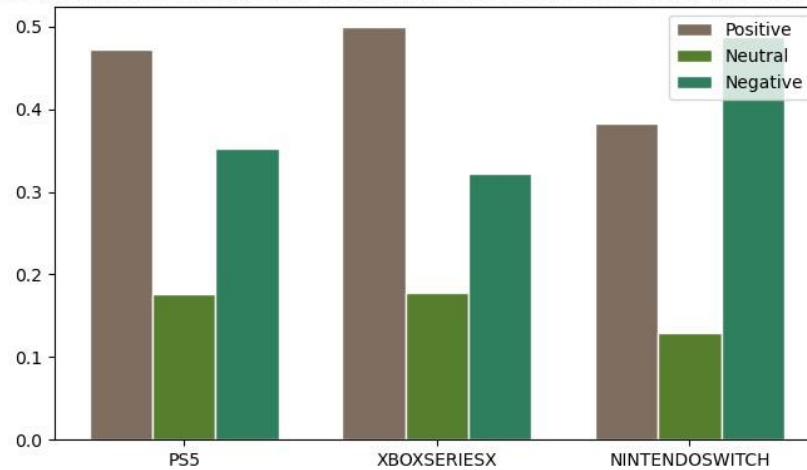
After all, we created our last graph which is a stacked bar plot and showing the sentiment polarity of tweets that their user is a person with influence on social media (in this case, in Twitter). We filter our dataset looking for tweets from people that have more than 10.000 followers. This means that as the more followers the user has, more users will have seen it. As a result, his sentiment has more value in total.

Stacked bar plot for polarity from tweets by famous people
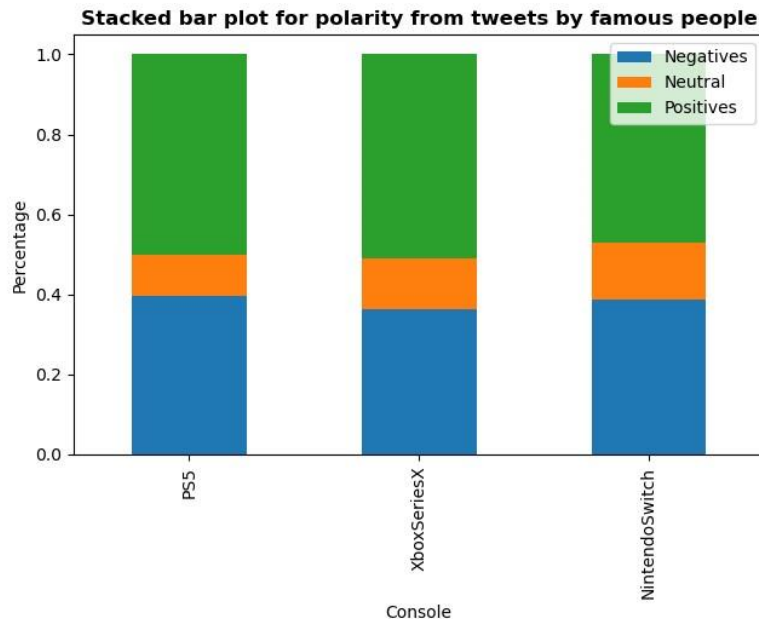
Findings and Discussion

Our first conclusion from the sentiment analysis we done was that the leader of the crowed was the Xbox with a small difference from the PS5. Seems that Xbox

owners or potential owners seems to be happy about their choice. However, Nintendo Switch users are the least happy with their choice while their negative sentiment is around 50%

After a small research we have done about these two competitive gaming consoles (PS5 and Xbox Series X) it became apparent that PS5 had 20% most sales than the Xbox Series X but that difference did not translate to better sentiment scores. This means that even PlayStation has more users in her latest console, they seem not to be totally satisfied in comparison with Xbox users.

After the analysis including only tweets from people with more than 10.000 followers, results are not irrelevant with the general view from the total of tweets. While they also seem to slightly be happier with Xbox Series X. However, in this case also, the sentiment differences are small between these three competitive consoles. Still, Nintendo Switch comes third again in our analysis while has as many positive as negative tweets.

In conclusion, all consoles except Nintendo Switch enjoyed positive or neutral sentiment while Nintendo Switch was the only one with negative sentiment as the most frequent.