

An Analysis of the Spotify – Top Tracks 2018

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Abstract

This project attempts to analyze Spotify's Top Tracks of 2018 to see if there are any prominent trends found throughout the data and how they may reflect the way in which society listens to music. Additionally, it focuses on how the rap genre has grown in popularity and how it may compare to other genres.

Background

For my research project, I decided to examine Spotify's Top Tracks of 2018 playlist. My primary research question was "Are there significant trends in Spotify's Top Tracks of 2018 chart that are representative of the way society listens to music?" and why they may have appeared. Additionally, with the rise in popularity of the rap genre and strong influence in current music, I was interested to see how often rap was represented within the chart and how it compares to other genres.

Background research on this project is mainly based on scientific research on what makes a song popular and the way in which listeners engage with music. While there is no clear answer as to how to make a song a top chart hit, research began to investigate what makes a song popular. In 2011, European researchers created a study where songs were broken down into twenty-three different elements, including ones used today by Spotify data scientists like "danceability" or "energy". After the release of the University of Bristol's "Hit Potential Equation", the BBC released a documentary that followed researchers' quest to find the data behind the perfect song. On top of what was already found by the University of Bristol, researchers were able to find more elements that proved significance such as tempo and harmony and create what the BBC calls "the secret blueprint for perfect pop."

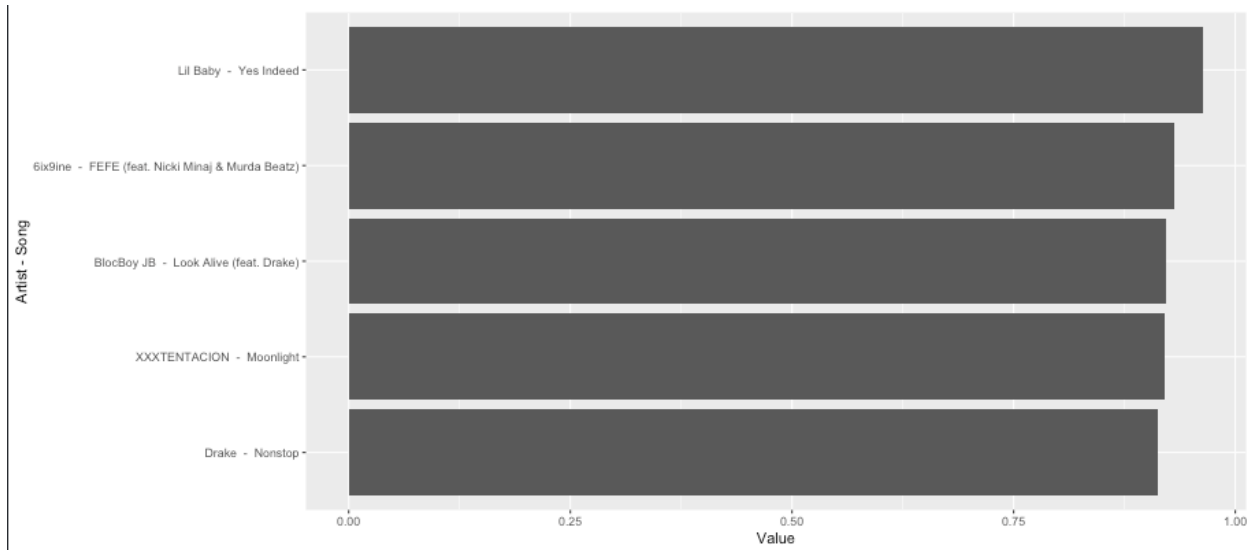
The simple fact is that what makes a song popular has changed over the years depending on what cultural shifts have occurred. For example, for a long time "danceability" was an influential element to popular songs, but today audiences prefer "loudness" and "simple binary rhythms". When we listen to music, it travels to all four lobes, each responsible for a different reaction. The auditory cortex is responsible pitch and volume, other parts controlling memory and attention. Researchers have found a link between dopamine and music, affecting each person differently and causing the "feel good factor" to be more complicated and possibly why mood boosting songs tend to climb to the top.

For rap's influence on the chart, Rolling Stone noted how young rappers faced major success in 2018 record labels. With Americans spending \$8.7 billion on music, rap has become the most popular genre in the United States and record labels are looking to keep the industry thriving. With far more advanced musical technology than ever before, it is important for music data to be tracked to follow trends and see where music can take us next.

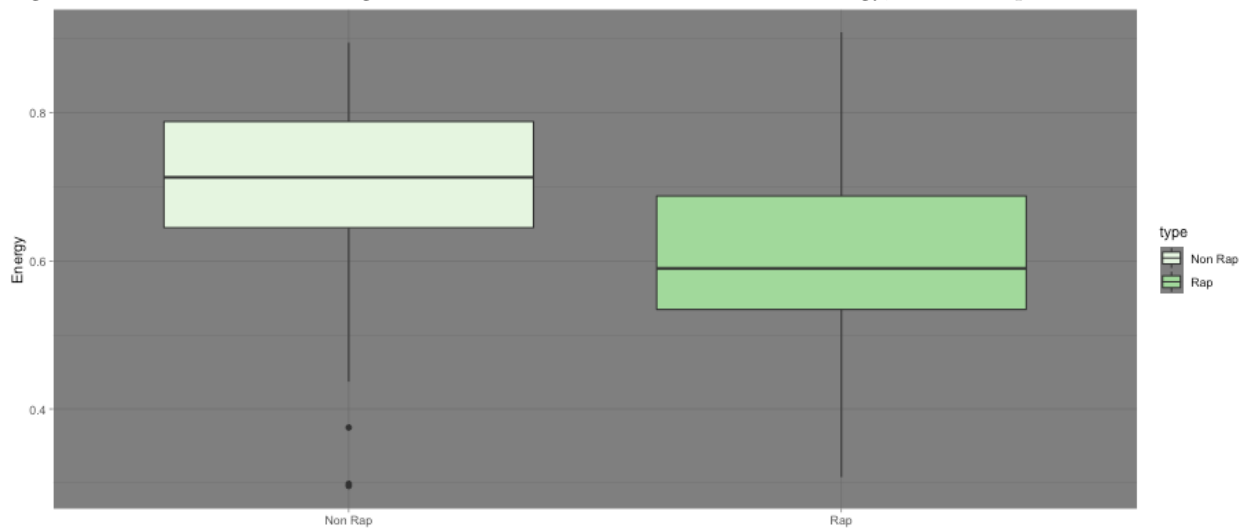
Methodology

To obtain data on Spotify's Top Tracks chart, I was able to import a cleaned data set from Kaggle.com using "read_csv". While I had managed to find a cleaned data set, Spotify also allows users to utilize the same information from their "Spotify for Developers" website via API code access. To add more depth to my project, I wanted to additionally evaluate the lyrics of songs. Since there was no data set readily available on this data, I used the genius tools to scrape lyrics from Genius.com and then proceeded to clean the data frame so it included just the words.

For my analysis, I mainly focused the usage of audio features across the chart and how rap compared to other genres in with these. When evaluating the chart as a whole, in almost every category, a rap song appears in the top five songs. As mention earlier, "danceability" was a huge indicator in a song's success and in Spotify's Top Tracks, all top five songs are rap.



It was fascinating to compare rap to other genres by audio features. The most shocking result I found was that rap tended to be less energetic than the rest of the chart. This was surprising because there is a strong correlation between loudness and energy, which rap had far more of.



Additionally, I created a correlation chart showing the relationship between all audio features. I was curious to see how each element affects another, and if there were any significant relationships between them. The strongest correlation was between loudness and energy, having an R-value of 0.73. The weakest was between acousticness and energy, having an R-value of -0.42. There is also a graph where viewers can choose their x and y variables and view the general relationship between the elements, and how they are correlated in each song. My word cloud produced a variety of phrases, but some of the most common ones were “love”, “feel”, and “want”. Since these are all expressions of desire or interaction, it makes sense that they would be top lyric choices if audiences tend to play “feel good” songs.

Conclusion

While my project is more of an exploratory one than problem solving, much of the data I had collected reflected trends that were proclaimed to make hits by researchers. While I may have not found any new trends for producers and artists to jump onto, I have backed up scientific research with data. “Danceability” and mood-boosting songs are still two elements dominating top tracks. I believe that rap was able to be

successful in recent years due to its ability to capitalize on key audio elements within the production of songs such as “energy” and “danceability”. If I were to expand upon my project, I would add a section about the sentiment of the songs and track listener interaction overtime with songs.