I'm Fine-- Spotify

The Observed Relationship Between Music Streaming and Mood Regulating

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Abstract

Streaming has become the most common form of media consumption in recent years, including on music applications like Spotify. Research has also shown that music has the ability to affect thoughts and feelings. This paper aims to first examine the connection between music streaming and mood regulation using a personal case study and Spotify APIs, then explores how Spotify users can listen to music to manage moods. It discusses the implications of these findings for the music streaming industry, and offers recommendations for users interested in intentional listening to music.

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Introduction

The proliferation of audio and video streaming videos changed how audiences consume media. Streaming services provide users with convenient access to vast repositories of content like music, movies, television series and more. Spotify, which launched in 2006, is one of the largest audio streaming providers. As of September 2022, Spotify has over 456 million monthly active users; 195 million of whom purchase subscriptions for the service. Spotify sets itself apart from its competitors by curating personalized content for users with its algorithm, and allowing users to analyze music libraries with Spotify for Developers. As a result, it is now easier than ever to customize the music listening experience for users to fit their mood and preferences.

Hypothesis

The research sets out to prove that a relationship exists between music streaming and mood regulating. If proven, the research intends on suggesting opportunities for listeners who seek to improve their mental and emotional health through music.

Methodology

The hypothesis is tested with a self-conducted case study in which I compared my own Spotify listening history and mood journaling notes. First, I created an application with Spotify

for Delevopers. I received an access token to make requests to the Spotify Web API. Once that had been completed, I continued to stream music on Spotify as normal. This updated my Spotify algorithm-generated playlists such as the Daily Drive, Daily Mixes, On Repeat and Top Songs of the given year. I kept track of four out of six Daily Mixes, four weeks worth of On Repeat, and Top Songs of 2019-2022. In R, I ran the following example of code:

```
>
> library(httr)
> library(jsonlite)
>
> api_key <- "82c60240149f4a8990804e9d7b3c6928"
>
> endpoint <- "https://api.spotify.com/v1/audio-features"
>
> params <- list(
+   id = "19n8izXThARSuQAXrOKNbO?si=93cc48ac6b80425f",
+   key = api_key
+ )
>
> response <- GET(endpoint, query = params)
>
> data <- jsonlite::fromJSON(content(response, as = "text"))
No encoding supplied: defaulting to UTF-8.
>
> print(data$acousticness)
NULL
> print(data$danceability)
NULL
> print(data$energy)
NULL
> print(data$valence)
NULL
```

I used Acousticness, danceability, energy, and valence to measure audio features of songs included in my study. High acousticness means that the musical artist performs more with instruments rather than electronic production. Tempo and rhythm factor into danceability, or how suitable a song is for dancing. Energy refers to the intensity and vigor of a song. Valence tells whether a song is overall positive or negative, and had the greatest impact on my findings.

In the meantime, I kept a daily record of my thoughts and feelings. I did this in the Notes on my mobile device, but I supplemented these with information from other applications, including Flo, Costar, Snapchat and iMessage. I utilized proofreading and coding tactics to dissect these findings. Additionally, I thought about major life events that could have impacted my mood.

The research is limited due to a small sample size and potential personal bias, since I used myself as the sole test subject. It also contains more qualitative than quantitative data. I made an attempt to quantify some of the results with something of a Likert scale, with 1 as the worst day and 10 being the best day ever. I have considered human error, too. So, findings must be accepted with caution.

Findings

All of the songs downloaded on my Premium Spotify account fall into at least one of these categories, in descending order of prominence: rap, reggae, country, sad, chill, indie, angst, angry, pop, R&B, folk, classic rock, EDM, happy and chill beats. Spotify made these from its audio features. Taylor Swift is my most versatile artist in my Spotify library, with highly measured songs like “Shake It Off” compared to doosies like “All Too Well (10 Minute Version).”

According to my Spotify Wrapped and Top Songs of 2019-2022, my mood has gotten steadily worse from 2019-2021, with a boost in 2022. This somewhat checks out. In 2019, I

graduated high school and began my first year of college. This playlist features mostly mainstream rap and country music, ranking high across the audio features. 2020 did well in terms of danceability and energy. I found new music through friends and parties, and when the COVID-19 pandemic sent us home for the spring semester, I continued to listened to those songs. A lot of rap, hip-hop and R&B contributed to this year.

2021 had been my poorest performance for music and mood. In 2021, I was grieving the death of a recent ex, and left a shell of my former self due to the global pandemic. Despite my top artist being Taylor Swift, three of my five top songs were by XXXTentacion, an infamous aggressive rapper. That genre of screamo rap remained a heavy influence for my Top Songs of 2022 that featured four $uicideboys songs in the first ten. In 2022, I streamed a lot of pop and EDM that heightened the valence, energy and danceability.

In the month October 2022, my music streaming depended on the status of my personal relationships. The worst week had been the first week, when my boyfriend and I were on a break. I listened to almost entirely indie folk music, and more excessively than usual. When we got back together, I stopped listening to music as much. The second week had been my happiest, unsurprisingly. The third week declined in all four measured, but I felt happy. I had listened to a lot of classic rock and aggressive rap in this time. The fourth week stayed low with more indie folk music and aggressive rap. While I had been looking forward to Halloween, I wrote about intense camping and irritability.

In daily life, I would typically play acoustic or country songs when I felt down; rap music when I felt empowered or aggravated; and pop or EDM when I was genuinely happy. These genres also correspond with what each metric means as a predictor of mood.

Similarly, I found that I may subconsciously have assigned my own meaning to certain genres. I listen to indie folk to travel, study or feel sorry for myself. I resort to rap and hip hop when I am feeling confident, empowered and maybe a little annoyed. I save pop and EDM for my showers and getting ready to see friends. The people I am around also have a say in the type of music that I play.

Conclusion

All in all, research has also shown that music has the ability to affect thoughts and feelings. With the rise of media streaming platforms such as Spotify and others, I decided to test the hypothesis that a relationship exists between music streaming and mood regulating.

I found that I am more likely to base my music off of my current mood, not vice versa. However, music can bait certain emotions. For instance, acoustic songs make it easier for me to cry, and heavy rap motivates me to work out. Choose music that aligns with your current mood and desired emotional state, unless you do not wish to feel that way anymore. For one, I should probably not listen to music that I associate with sadness when I study. if you want to feel more energetic and upbeat, listen to music with high energy and high valence.

Try using music as a background soundtrack to your daily activities, rather than focusing on it directly. This can help you stay focused and productive, while also benefiting from the mood-boosting effects of music. Lastly, do not feel bound to the music that you currently play. Branch out whenever possible. Premium Spotify subscribers tend to have more autonomy over the specific songs they may stream, so free users should search for playlists that center around moods, such as the Daily Wellness playlist. This has become a relevant outcome of the COVID-19 pandemic. People had more time to themselves, to take on new hobbies, and try new music.

Further research must be conducted in order to prove the validity of these test results, especially since I have identified a number of limitations within the study. The developers base high valence on a set of agreed upon ideas of what happy, positive music sounds like to a reasonable human. The research shows that music streaming and mood regulating can have a strong correlation, but I would be most interested to do an empirical test on the effect that the pandemic had on music listening habits.

In an informal focus group of seven participants that I later conducted regarding that query, participants all accredited their friends as the biggest contributors to their music taste. More time being at home meant they would listen to their parents music more often. Sadder music feels more personal and intimate, too. Participants also brought up active versus passive listening. They would consume higher energy and danceability music in more of a passive way, and that with higher acousticness and valence in an active way, for the most part.

Overall, the key is to be intentional about your music listening and to choose music that aligns with your mood and desired emotional state. By experimenting and finding what works best, you can use music to boost your mood and improve your emotional well-being.