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Stat 199L - Spring 2023

Team Stattastic Final Presentation

[Just Dance(ability)]

[Spotify Statistics]

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INTRODUCTION: TOPIC

Research questions:

01 3:15min

How does danceability affect the popularity of songs?

02 3:15min

How does the impact of danceability on popularity differ between genres?

03 3:15min

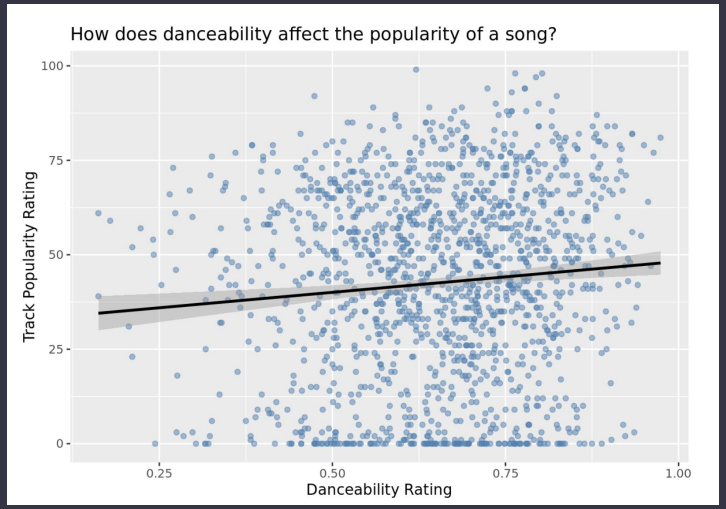
How do other variables related to a song influence the relationship between danceability and popularity?

INTRODUCTION: DATA

Spotify R package: contains 5,000 songs from 6 main music categories (EDM, latin, pop, R&B, rap, and rock)

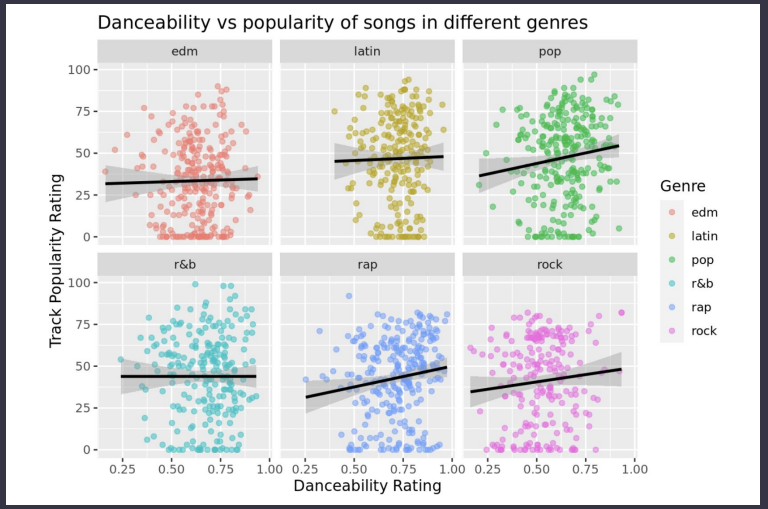
Danceability	How suitable a track is for dancing based on a combination of musical elements including tempo, rhythm stability, beat strength, and overall regularity. Ranges from 0.0 (least danceable) to 1.0 (most danceable).
Popularity	Song popularity on a scale from 0 to 100.
Tempo	Estimated tempo in beats per minute (BPM).
Energy	Measure of intensity and activity based on dynamic range, perceived loudness, timbre, onset rate, and general entropy. Ranges from 0.0 to 1.0.

EDA HIGHLIGHTS



General trend of popularity based on the tracks danceability rating

*Random sampling of 1500 songs



Trend of popularity based on the tracks danceability separated by the genre

*Random sampling of 1500 songs

MODEL I: GENRE & DANCEABILITY

Order by

Model	AIC
General - All Genres	304371.9
Latin Genre	47986.36
Rap Genre	52373.25

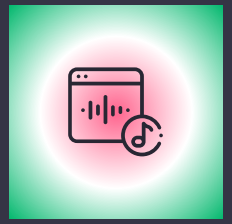
MODEL II: DANCEABILITY*TEMPO*ENERGY

Model	Type	AIC
Dance + Tempo	Additive	304372.5
Dance + Energy	Additive	304015.9
Dance + Tempo + Energy	Additive	304003.1
Dance * Tempo	Interactive	304374.2
Dance * Energy	Interactive	304012.7
Dance * Tempo * Energy	Interactive	303995.3

CONCLUSIONS

1. Danceability is not a great predictor for popularity when **not** faceted by genre.
2. Danceability has different impacts on popularity when faceted by genre.
3. Danceability has a positive and significant effect on popularity ratings of general, latin, and rap songs. This relationship varies
    a. Rap has the highest coefficient
    b. General has the lowest
4. General model had best fit according to AIC criteria (lowest mean squared error)
5. The interactive model for danceability * tempo * energy has lowest AIC
6. The additive and interactive models that included the energy variable had lower AIC values

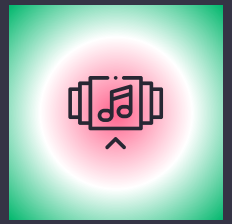
FUTURE WORK



Other Variables

3:15

Examine the impact of other variables other than danceability (loudness, key, tempo)



Other Dataset

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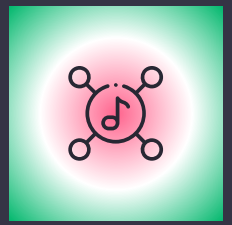
We could examine a dataset of different spotify songs to validate our results



Other genres

3:10

We could delve deeper into a subgenre of rap or latin to learn more about popularity