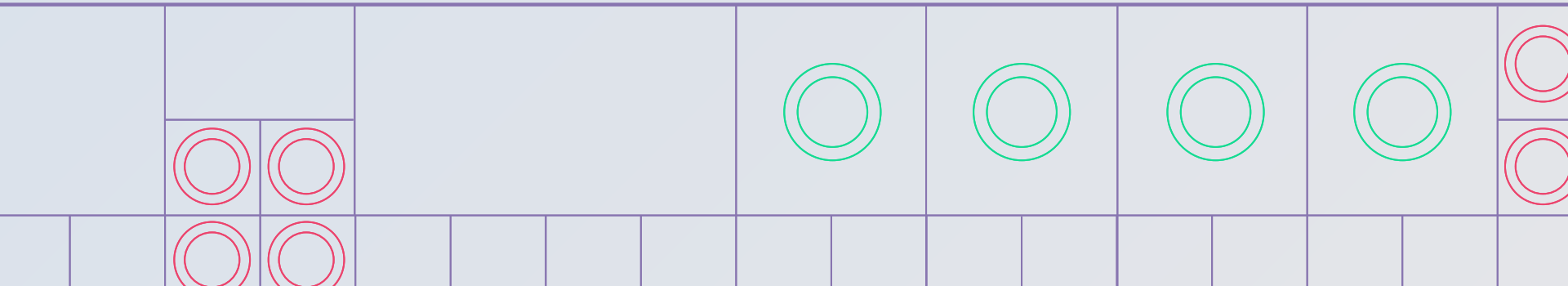
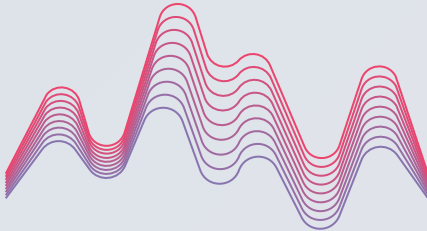


Influence of Danceability on Song Popularity

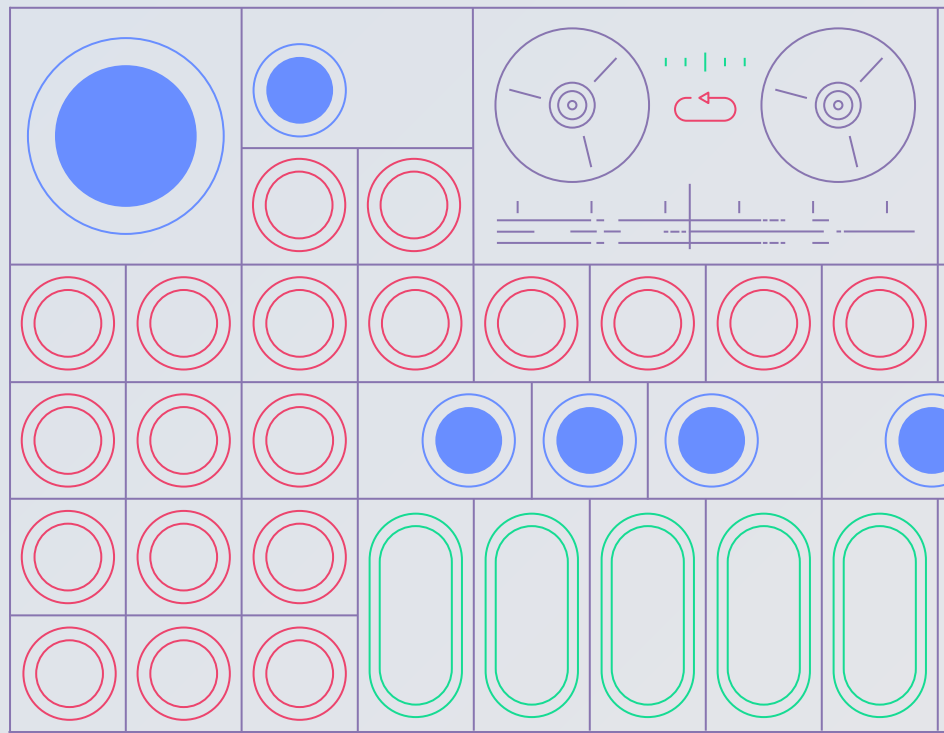
Giorgio Soggiu, Luis García Lizarán, Anuradha Passan

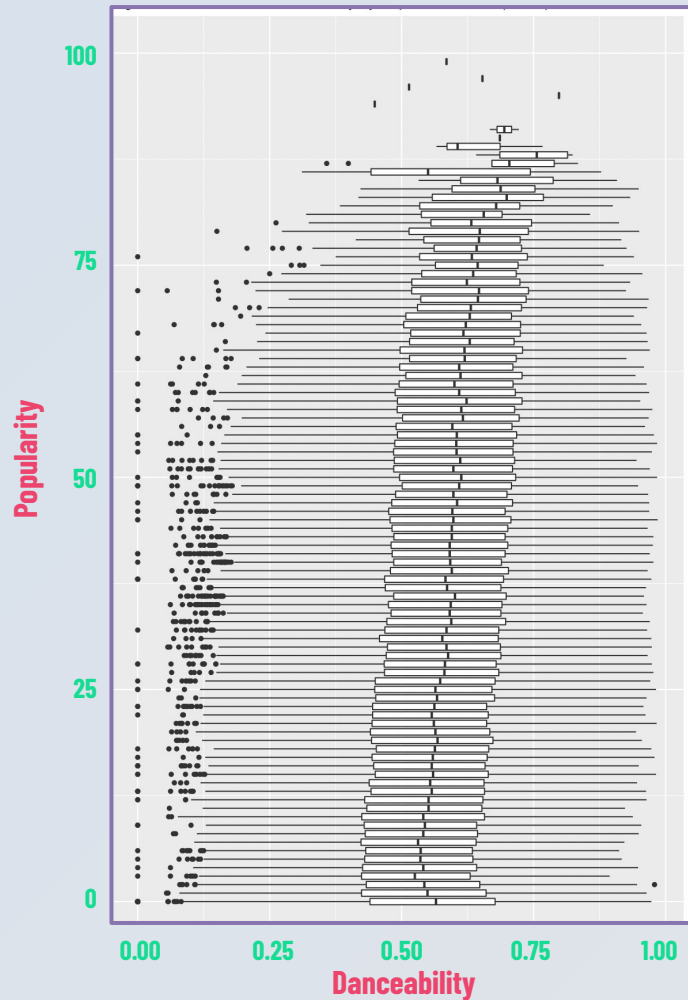
To what extent does the danceability of a song determine a song's popularity?



Data

- **Source:** Kaggle/Spotify API
- **Dataset curated:** Oct. 2021
- **Final Sample:** 467,654
 - Split 30%-70%
- **Observations:** songs



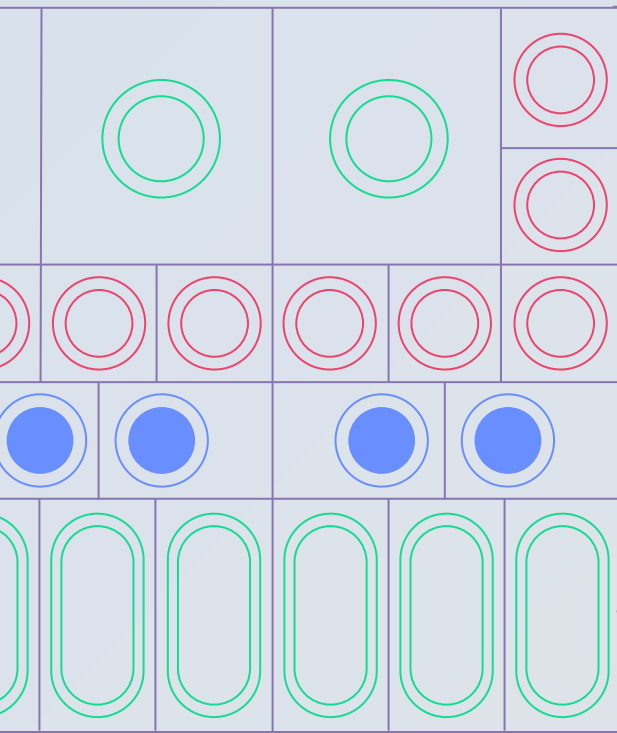


— Danceability vs. Popularity —

- *Popularity*: 0-100
 - based on Spotify's algorithm which accounts for number of plays and how recent the plays were
- *Danceability*: 0-1
 - How suitable a song is for dancing based on tempo, rhythm stability, beat strength, & overall regularity
- Wide danceability variance at popularity levels
- Median of danceability starts to increase with popularity (75+)
- Indication of some positive relation between the two



Proposed Models



1 $popularity = \beta_0 + \beta_1(danceability)$

2 $popularity = \beta_0 + \beta_1(danceability) + \beta_2(explicitness) + \beta_3(speechiness) + \beta_4(valence) + \beta_5(energy)$

3 $popularity = \beta_0 + \beta_1(danceability) + \beta_2(explicitness) + \beta_3(speechiness) + \beta_4(valence) + \beta_5(energy) + \beta_6 \ln(\text{no. artist followers})$

Results

<i>Dependent variable:</i>			
	popularity		
	(1)	(2)	(3)
danceability	14.548*** (0.190)	23.015*** (0.220)	21.827*** (0.194)
explicit		11.364*** (0.171)	8.374*** (0.143)
speechiness		-6.360*** (0.137)	-2.473*** (0.100)
valence		-17.155*** (0.146)	-12.626*** (0.128)
energy		21.559*** (0.131)	14.262*** (0.119)
log(followers)			2.719*** (0.009)
Constant	20.252*** (0.110)	13.392*** (0.117)	-15.092*** (0.139)
Observations	327,358	327,358	327,358
R ²	0.018	0.142	0.338
Adjusted R ²	0.018	0.142	0.338
Residual Std. Error	17.289 (df = 327356)	16.156 (df = 327352)	14.195 (df = 327351)
F Statistic	5,864.514*** (df = 1; 327356)	10,847.440*** (df = 5; 327352)	27,828.470*** (df = 6; 327351)
<i>Note:</i>			
*p<0.1; **p<0.05; ***p<0.01			

- All variables significant
- Low R² and Adjusted R²
- Not accounting well for variance
- Proof of a positive relation between popularity and danceability
- Model 2 most robust



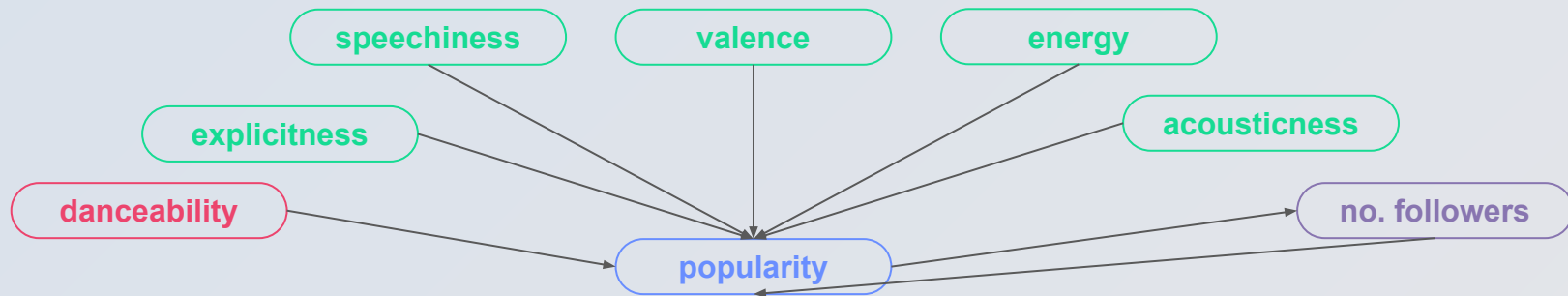
Assumptions & Limitations

Large Sample Assumptions

IID, Unique BLP

Structural Limitations

Omitted Variable Bias -
song promotion,
Reverse Causality



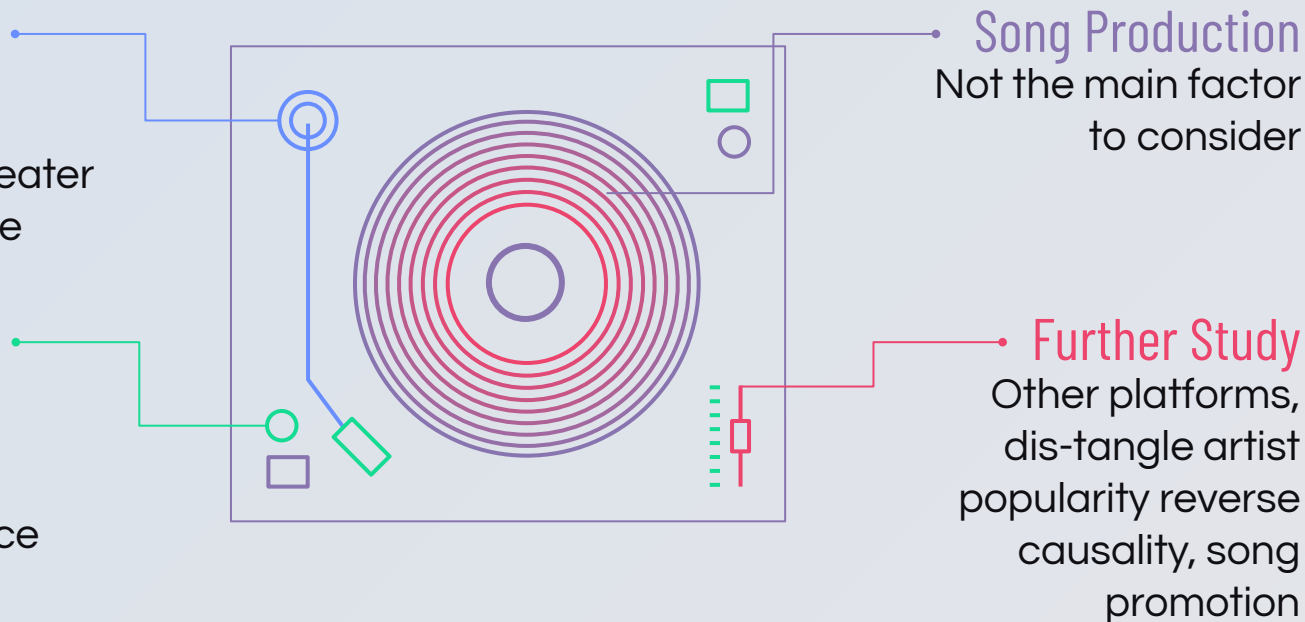
Concluding Remarks

Positive Relationship

Danceability influences a greater popularity score

Not a Strong Relationship

Failure to account for enough variance



Questions?

