

Project 1

Group 4

The Impact of Social Media on Music Trends and Success



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Objective

This project aims to explore the relationship between social media and music popularity by analyzing trends in listen counts and uncovering key factors driving popularity, such as location, genre, and language.

Key area driving popularity:

- Genres per country
- Artist Popularity & Danceability vs Track Popularity
- Song's Language

Genres

Out of 5.9K Music Genres, Are there common patterns in genre preferences across countries that align with a song's popularity?

Metrix : Popularity Score = The popularity score ranges from 0 (least popular) to 100 (most popular).

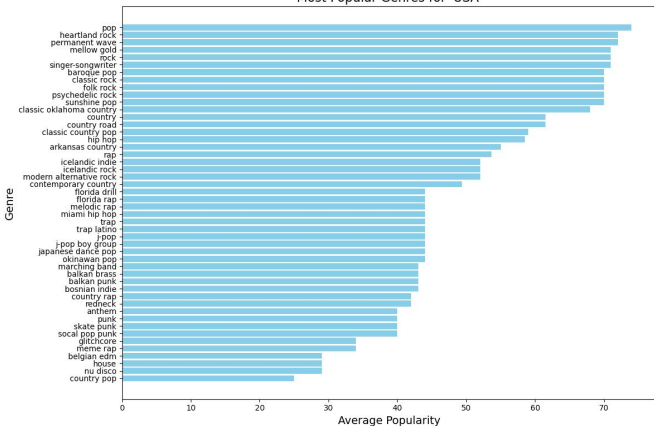
The Average Popularity Score is calculated by dividing the total popularity score for all songs of the same type or genre by the total number of songs within that type or genre.

Data Source :

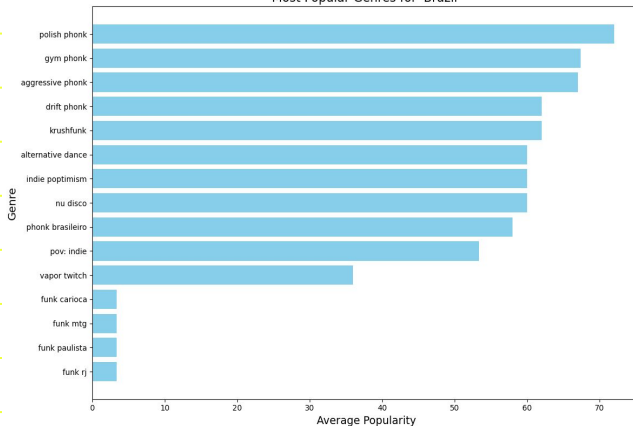
- 1. Spotify**
- 2. Apple**
- 3. Genius**

Popular Genres by Top Country

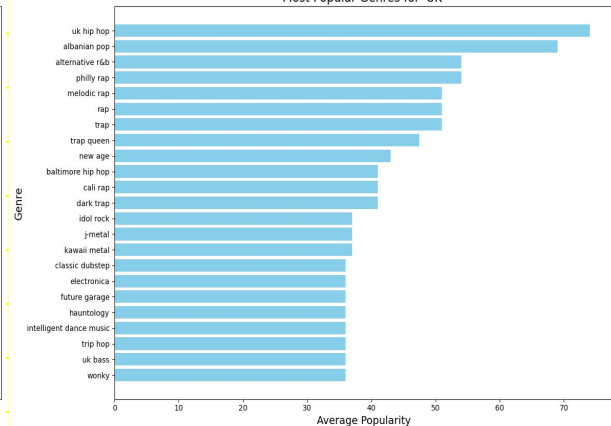
Most Popular Genres for 'USA'



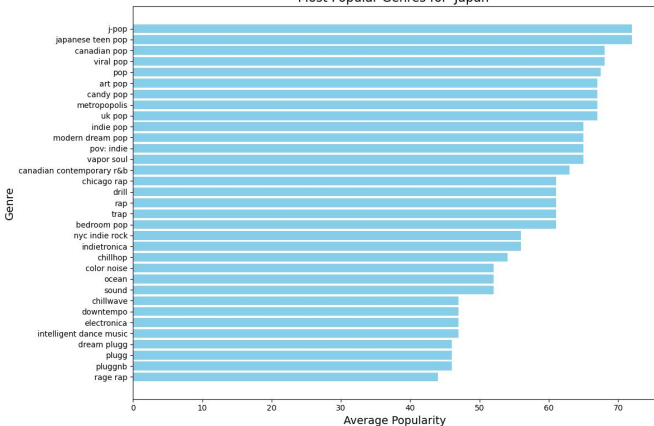
Most Popular Genres for 'Brazil'



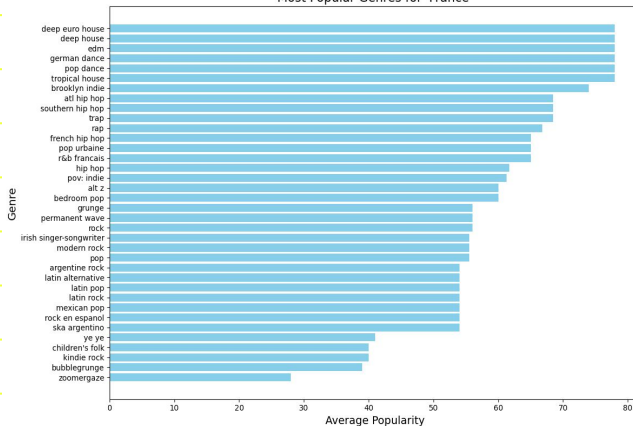
Most Popular Genres for 'UK'



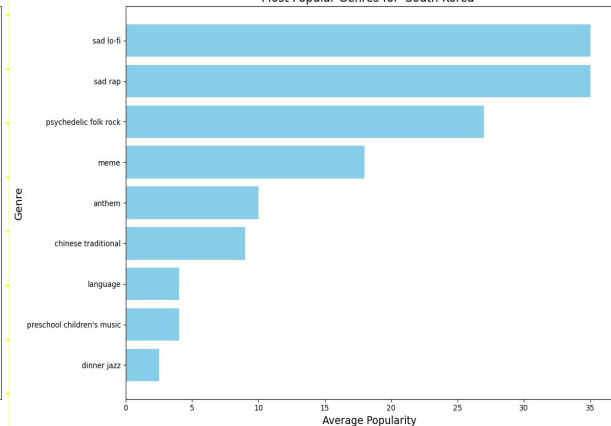
Most Popular Genres for 'Japan'



Most Popular Genres for 'France'

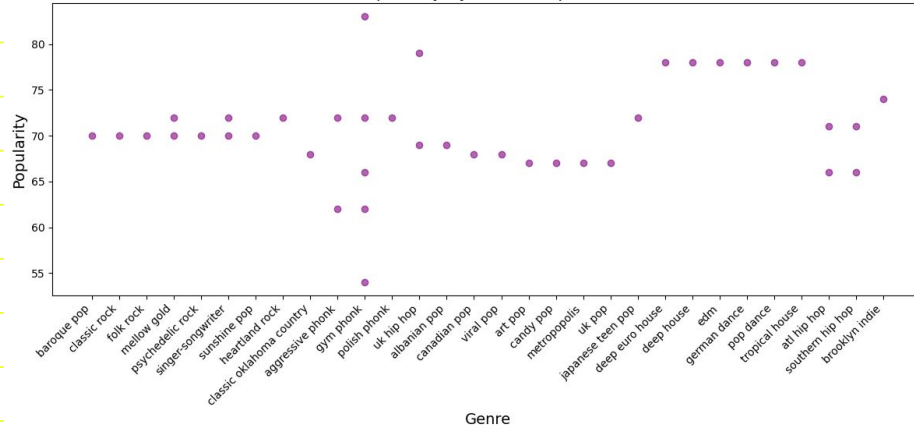


Most Popular Genres for 'South Korea'

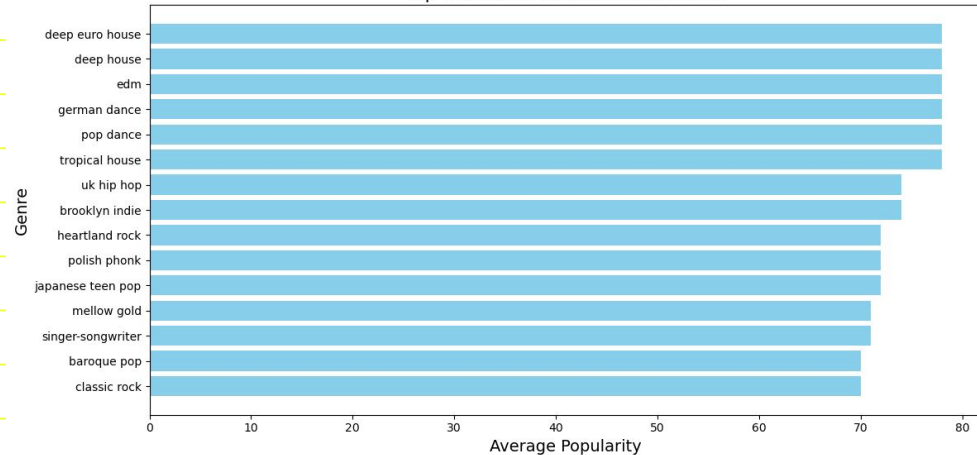


Popular Top 15- 30 Genres Across all countries

Track Popularity by Genre (Top 30 Genres)



Top 15 Genres Across All Countries



Conclusion

In summary for the last two slides reveals how music preferences vary globally, with universal genres like pop and hip-hop dominating, while regional genres such as J-pop, and K-pop highlight cultural uniqueness. The use of metrics like the popularity score provides valuable insights into audience behavior, helping us identify opportunities for targeted marketing and content creation. By leveraging data from platforms like Spotify, Apple, and Genius, we can better understand what resonates with listeners globally and locally.

Ultimately, this analysis underscores the importance of blending global appeal with local relevance in crafting effective music strategies.

Would songs be more/less
popular on TikTok based on
artist popularity?

(Based on 2022 data)

How did we achieve these results?

Took 2 datasets

- Spotify top charting songs from 2022
- Popular TikTok songs from 2022

Merged 2 datasets on track name and consolidated the columns in the dataframe to include only the information needed

- Artist name
- Artist popularity
- Song name
- Song popularity
- Song's peak rank
- Danceability

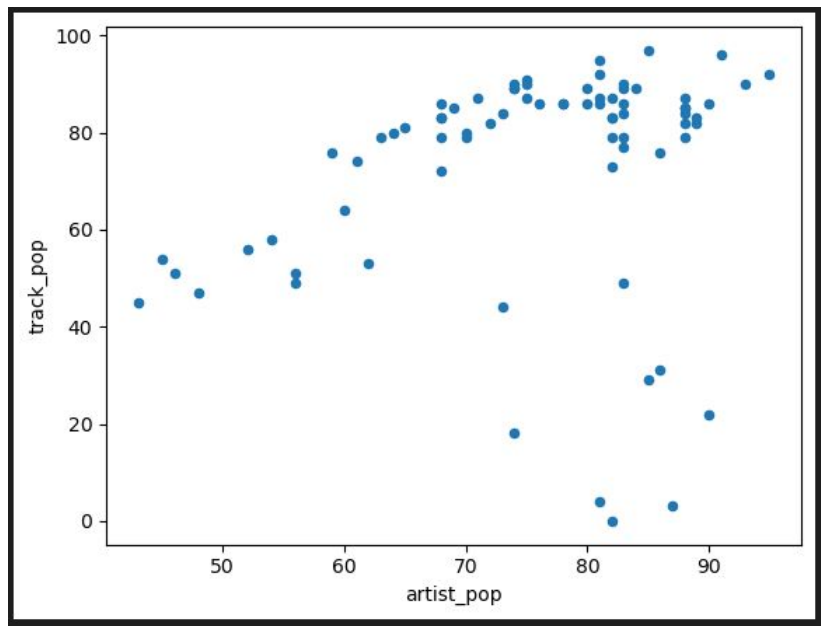
	artist_names	track_name	peak_rank	artist_pop	track_pop	danceability
52	Harry Styles	As It Was	1	91	96	0.520
30	Måneskin	Beggin'	1	78	86	0.714
16	The Weeknd	Blinding Lights	1	93	90	0.514
28	Bad Bunny, Jhay Cortez	DÁKITI	1	48	47	0.726
55	Joji	Glimpse of Us	1	85	97	0.440
...
42	Maroon 5, Wiz Khalifa	Payphone	136	43	45	0.721
43	WILLOW	Wait a Minute!	138	76	86	0.764
66	LF SYSTEM	Afraid To Feel	150	68	86	0.578
83	Labrinth	Forever	185	46	51	0.750
69	Imagine Dragons	Demons	194	52	56	0.700

76 rows × 6 columns

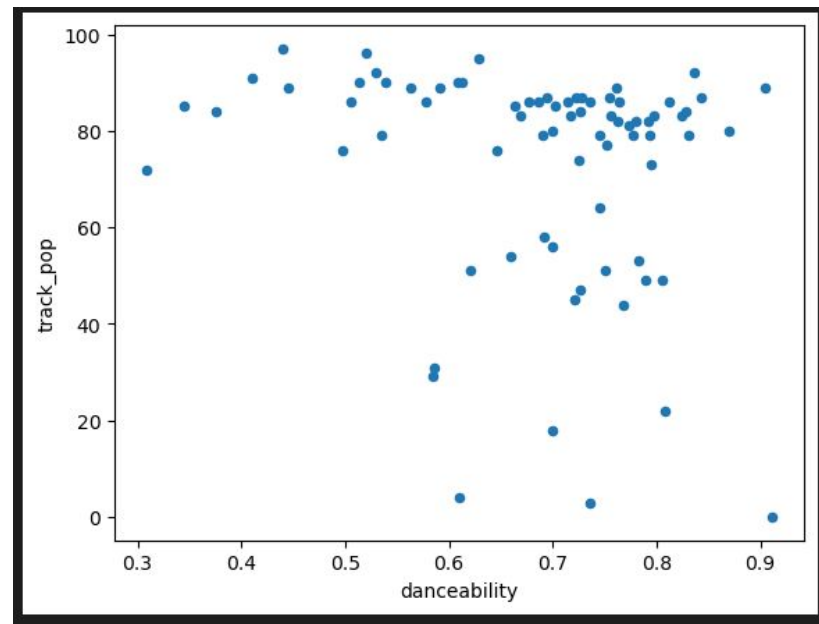
Is There a Connection?

- We wanted to see if there was correlation between artist popularity and song popularity, and also danceability and song popularity
- Why danceability? Some of the popular audio on TikTok has been known to be incorporated in dance challenges. We wanted to see if this also had an effect on track popularity within the app, and if artists that are known for having more danceable music would be more popular on the app.

Scatterplots of Artist Popularity/Danceability vs. Track Popularity



As we can see, there doesn't seem to be a strong correlation between the track's popularity and the artist popularity, seeing that some songs from popular artists are not very popular on the app.



From this graph, there does not seem to be a correlation between danceability and track popularity, seeing that although there are songs that are danceable and popular, there are also songs that are not danceable that are still popular, and even more popular than the danceable ones.

Now What?

Seeing the lack of correlation between artist popularity and song popularity, we decided to test this by seeing who the top 5 artists are in terms of popularity, and see where their songs rank amongst the top 20 songs according to the dataset.

	artist_names	artist_pop	danceability
60	Drake, 21 Savage	95	0.529
17	The Weeknd	93	0.513
52	Harry Styles	91	0.520
35	Justin Bieber, Daniel Caesar, Giveon	90	0.677
12	Ed Sheeran	90	0.808

Findings

We found that among the top 5 artists according to popularity, only 2 of them appeared in the top 5 of songs on TikTok for 2022, and 3 of the top 5 artists made it on the top 20 songs list, with 2 being outside of the top 20 songs on TikTok. This shows us that although artist popularity is a factor in track popularity, there are more factors that contribute to how popular a song becomes on social media, and in this case, TikTok in particular.

	track_name	artist_names	track_pop	danceability	peak_rank
55	Glimpse of Us	Joji	97	0.440	1
52	As It Was	Harry Styles	96	0.520	1
54	Running Up That Hill (A Deal With God)	Kate Bush	95	0.629	1
60	Jimmy Cooks (feat. 21 Savage)	Drake, 21 Savage	92	0.529	7
57	About Damn Time	Lizzo	92	0.836	9
10	MIDDLE OF THE NIGHT	Elley Duhé	91	0.410	14
16	Blinding Lights	The Weeknd	90	0.514	1
19	Sweater Weather	The Neighbourhood	90	0.612	29
62	Until I Found You	Stephen Sanchez	90	0.539	30
21	Dandelions	Ruth B.	90	0.609	35
0	Heat Waves	Glass Animals	89	0.761	1
1	STAY (with Justin Bieber)	The Kid LAROI, Justin Bieber	89	0.591	1
63	First Class	Jack Harlow	89	0.905	2
58	SNAP	Rosa Linn	89	0.563	26
18	Another Love	Tom Odell	89	0.445	31
4	abcdefu	GAYLE	87	0.695	1
3	Enemy (with JID) - from the series Arcane Leag...	Imagine Dragons, JID, Arcane, League of Legends	87	0.728	3
6	MAMIII	Becky G, KAROL G	87	0.843	5
14	The Motto	Tiësto, Ava Max	87	0.754	23
64	Betty (Get Money)	Yung Gravy	87	0.723	78

Does a certain language of a song impact the song's success and popularity?

Null Hypothesis: Language does not play a role in a song's success/popularity .

Alternate Hypothesis: Language plays a role in a song's success/popularity.

*Dataset used is based on most streamed songs on spotify in 2023

Language Used in Top 100 Songs 2023

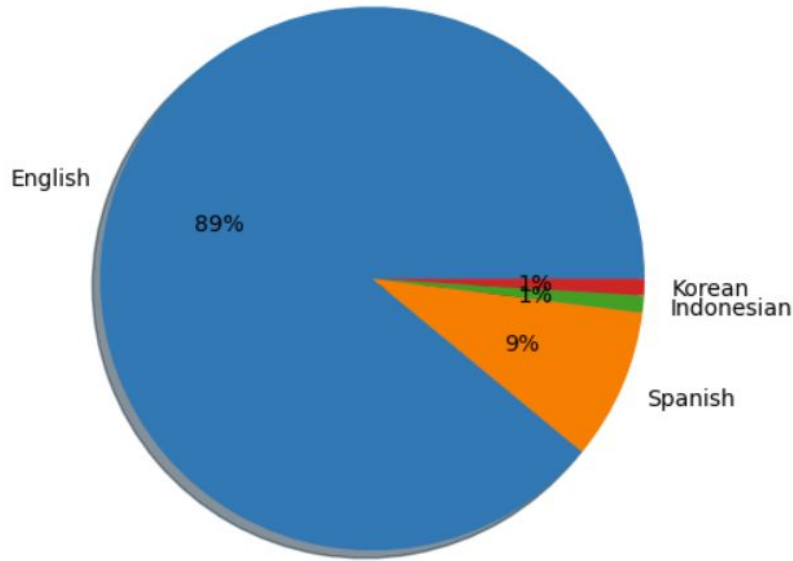


Fig 1: Language Used in Top Songs 2023.

Pie chart of languages that is used in the top 100 songs on spotify 2023.

Highest Streams by Language

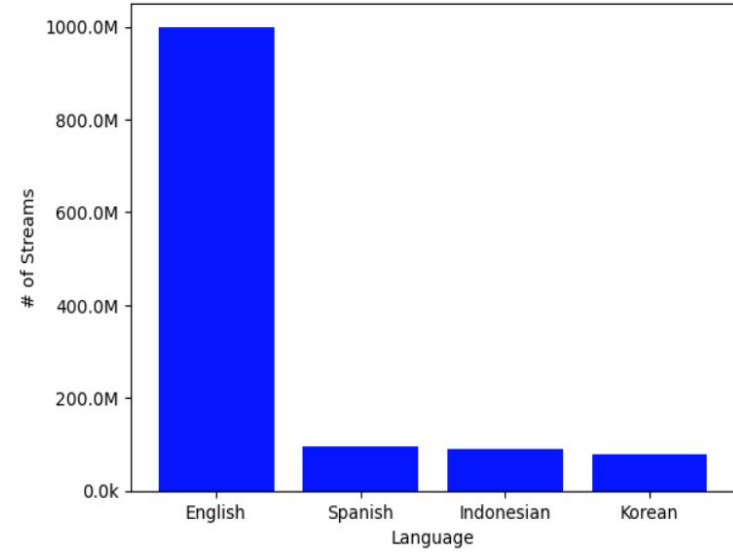


Fig 2: Highest Streams by Language

Bar chart showing the highest amount of streams each of the top songs of each of the 4 languages in the top 100 songs.

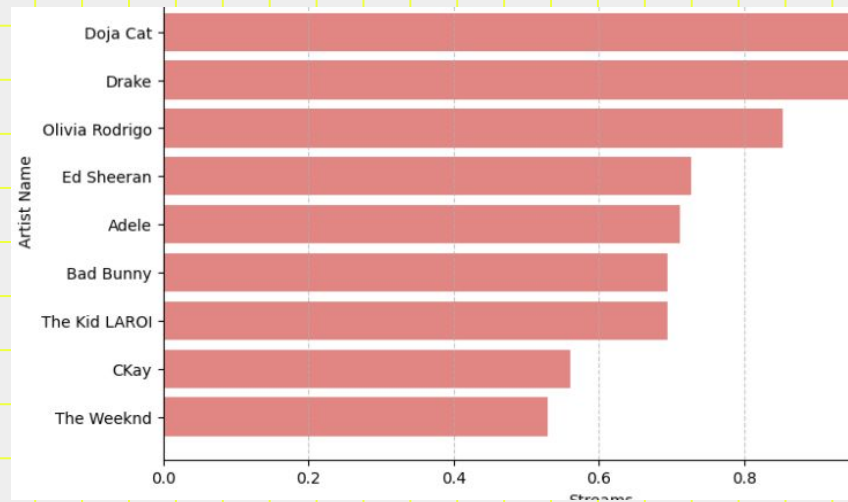
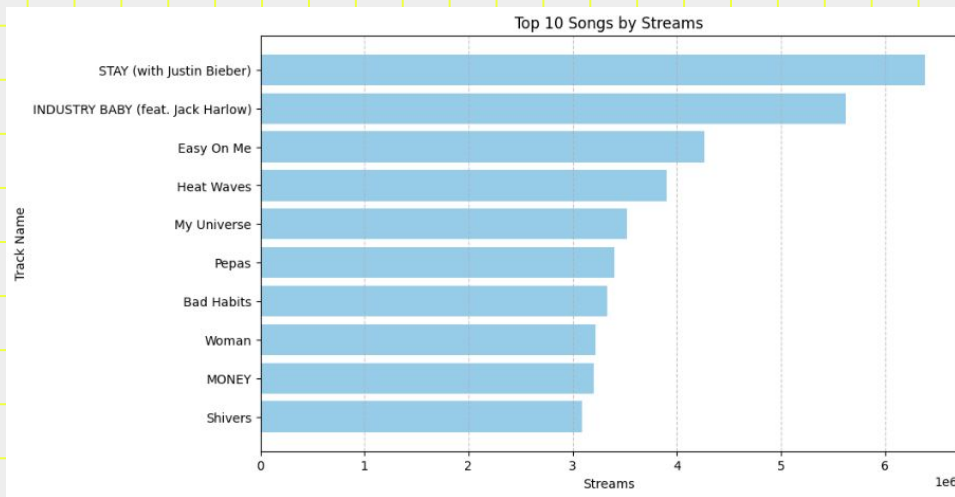
The Answer

Taking a sample of 100 of the whole population (943), I calculated the p-value in python and got **5.35e-06**.

That p-value is smaller than 0.05 which means we can reject the null and accept the alternate hypothesis.

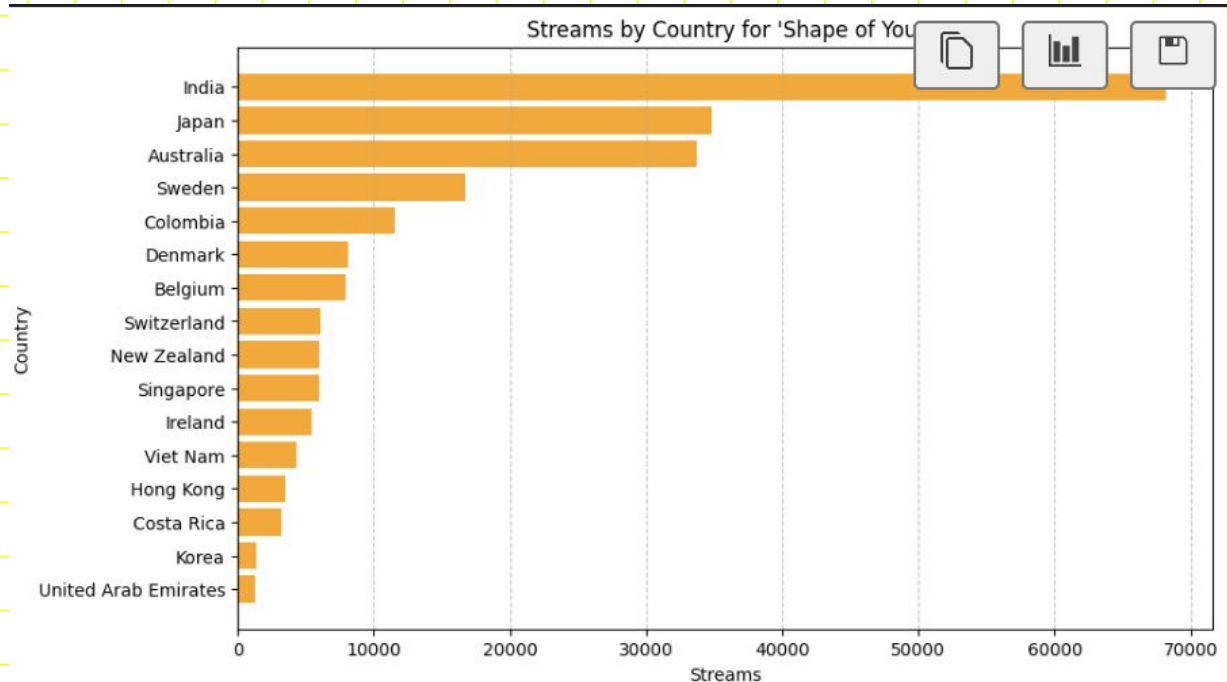
This means that language does play a role in a song's popularity. And in our case, songs that are in English are significantly more popular than songs that aren't.

This slide introduces analysis, setting the stage for exploring how songs and artists gain popularity on Spotify across various countries. It highlights focus on uncovering patterns in streaming trends, artist diversity, and regional preferences.

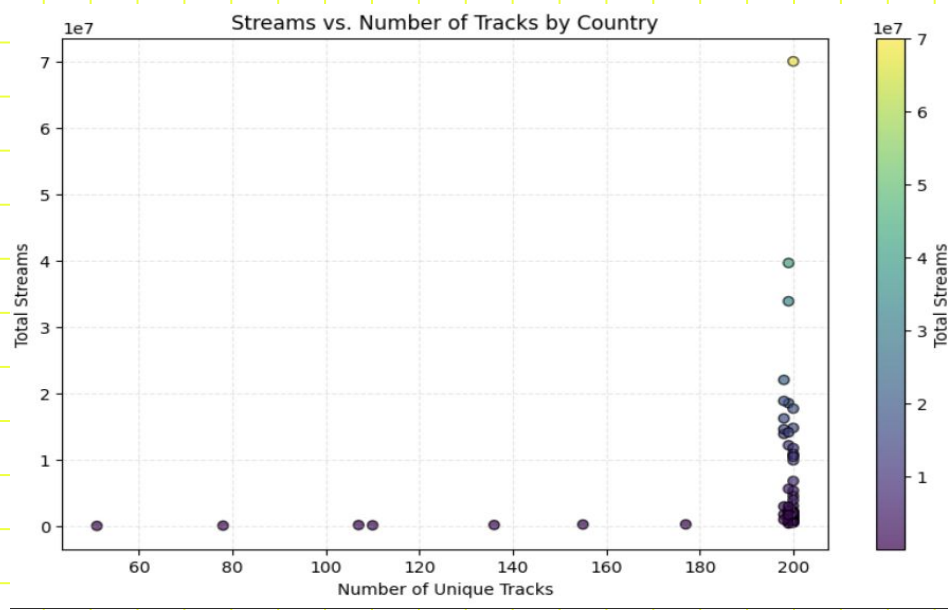


The graph shows the most streamed songs globally, highlighting tracks and top artists.

The graph highlights how a single track like "Shape of You" achieves varied popularity across countries, showcasing the importance of regional and cultural dynamics in the global music industry.



Streams vs. Number of Tracks by Country



1. United States:

- A high number of unique tracks and the largest total streams, reflecting a diverse and engaged audience.

2. Brazil and India:

- High streams but fewer unique tracks compared to the U.S., indicating the potential impact of viral hits or concentrated artist popularity.

Thank you