



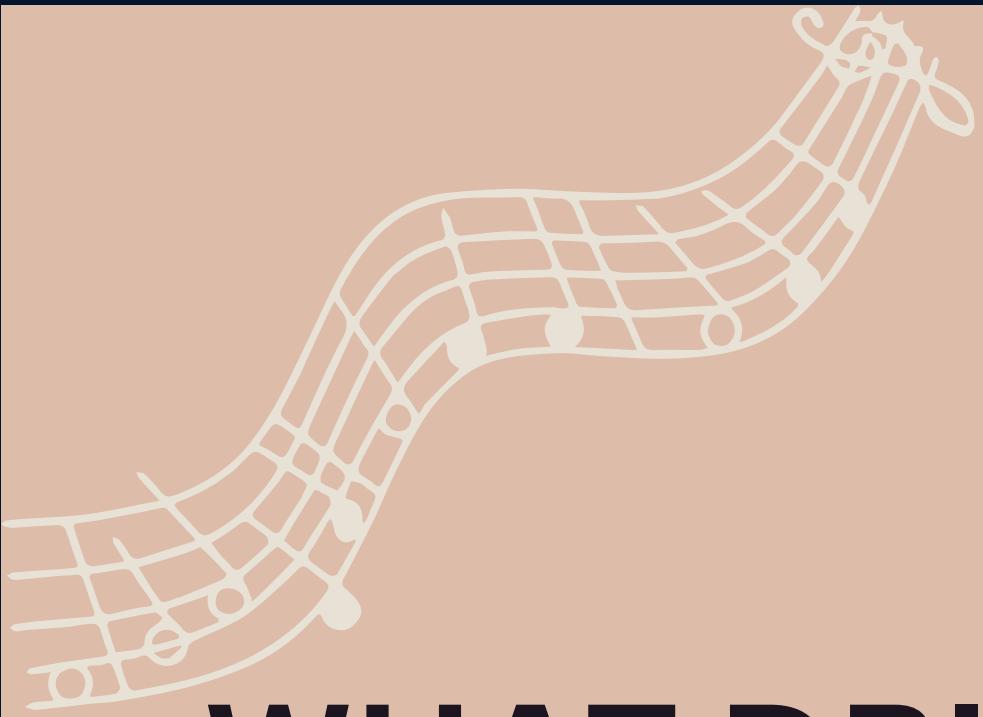
SONGS - 2023



@DATA ANALYTICS



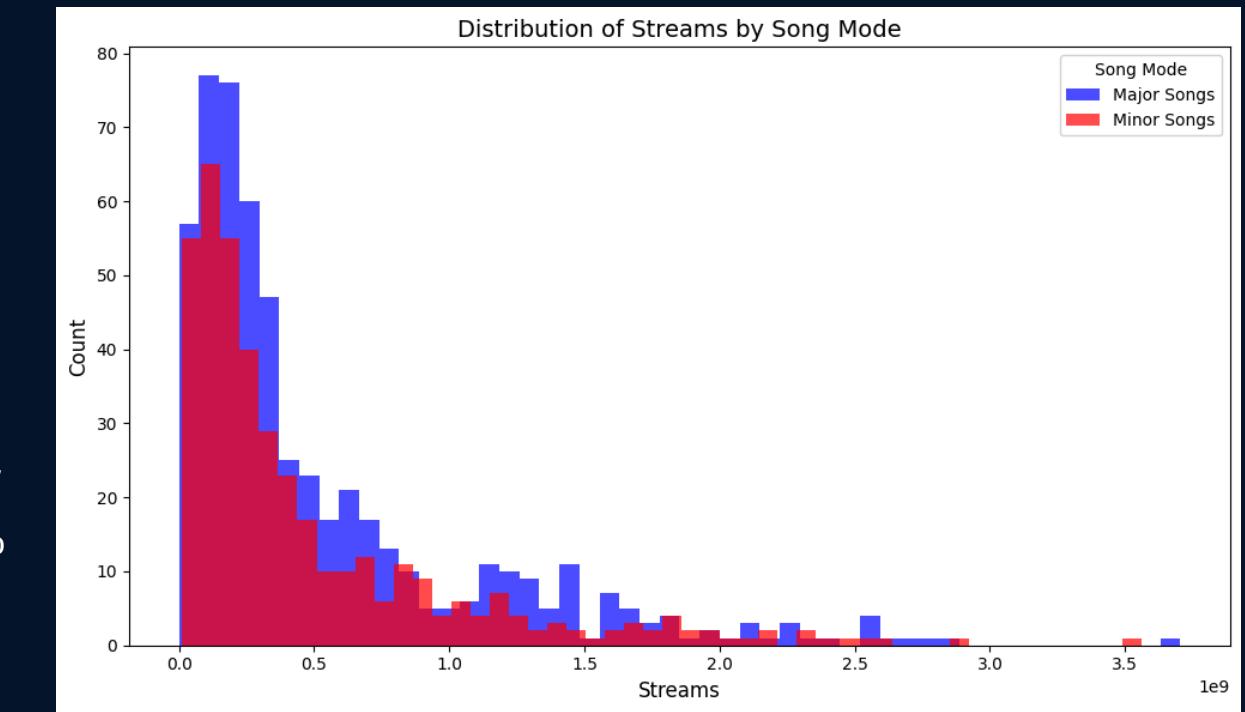
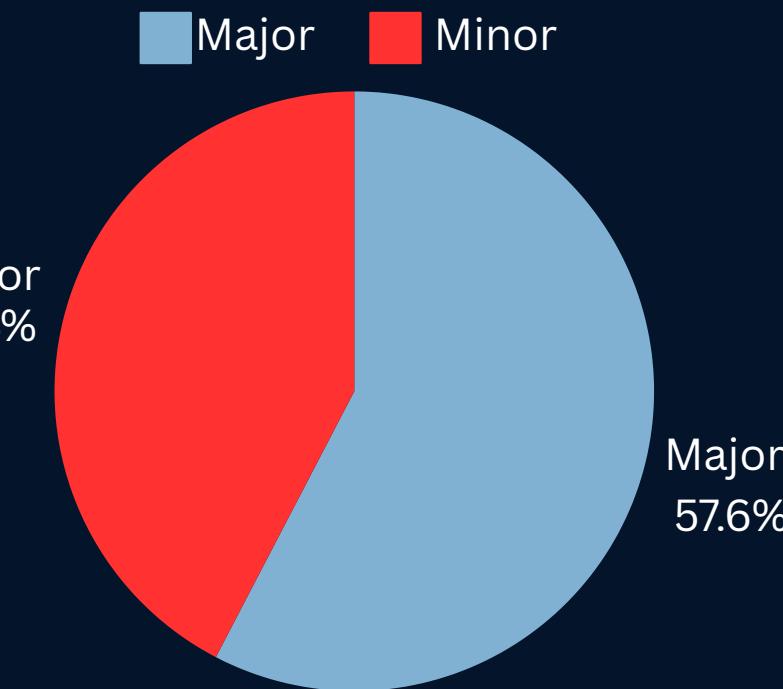
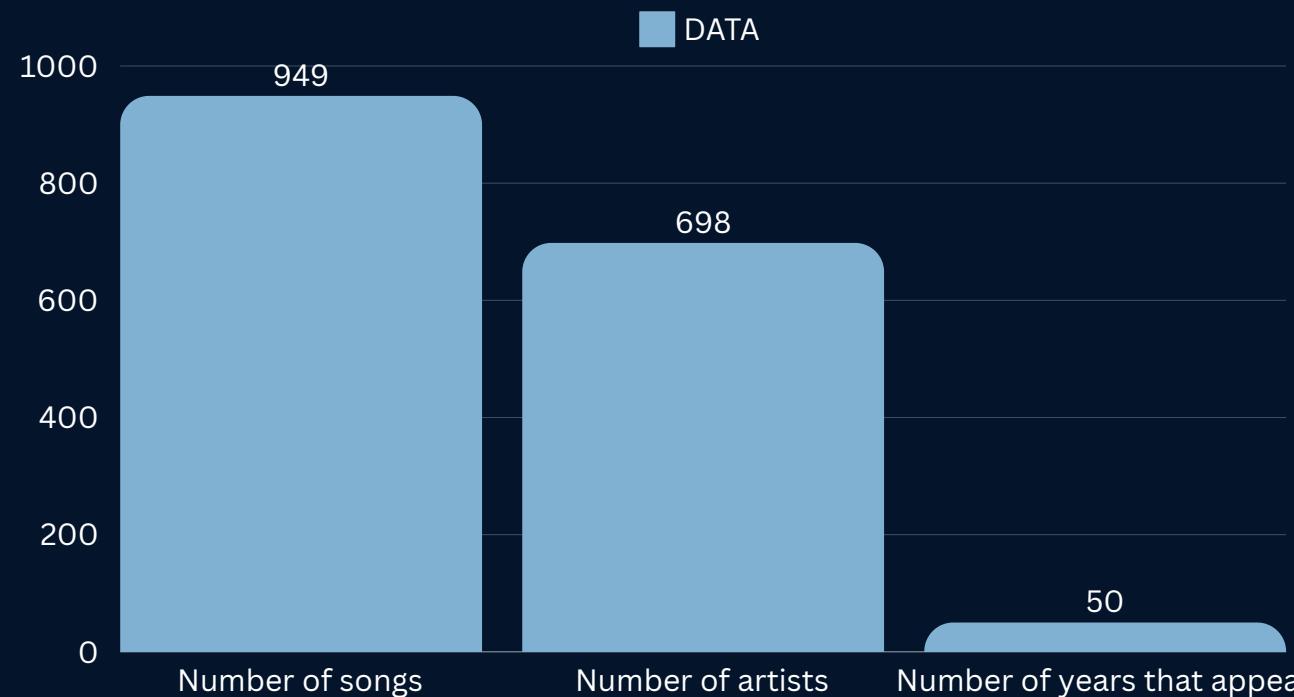
SHLOMI SHOR



WHAT DRIVES THE SUCCESS OF SONGS AND ARTISTS ON STREAMING PLATFORMS?

OVERVIEW OF THE DATASET

KEY INSIGHTS: SONG COUNT, ARTIST DIVERSITY, AND MOOD DISTRIBUTION



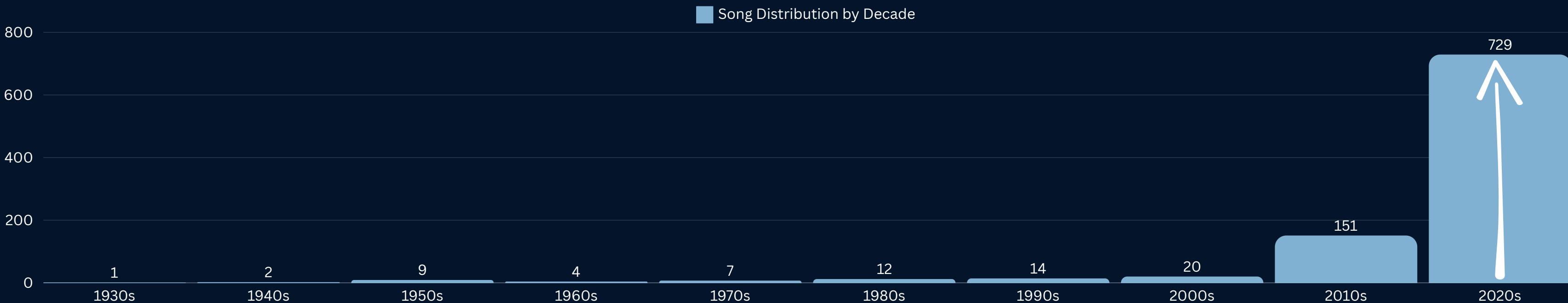
- **TOTAL SONGS:** 949 UNIQUE SONGS AFTER REMOVING DUPLICATES
- **TOTAL ARTISTS:** 698 UNIQUE ARTISTS, SHOWCASING A DIVERSE MUSICAL RANGE
- **TIME SPAN:** THE DATA SPANS **50 YEARS**, WITH THE OLDEST SONG FROM **1930** AND THE NEWEST FROM **2023**.
- **SONG MOOD DISTRIBUTION:**
 - **547 MAJOR KEY SONGS** (ASSOCIATED WITH HAPPIER MOODS)
 - **402 MINOR KEY SONGS** (ASSOCIATED WITH SADDER TONES)



KEY AVERAGES: DANCEABILITY, ENERGY, AND MOOD TRENDS ACROSS SONGS

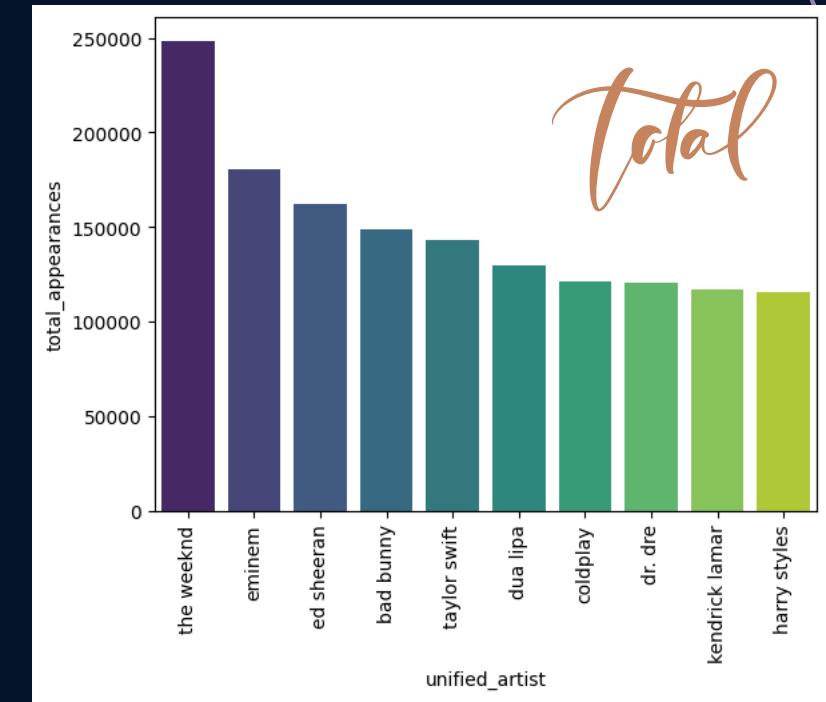
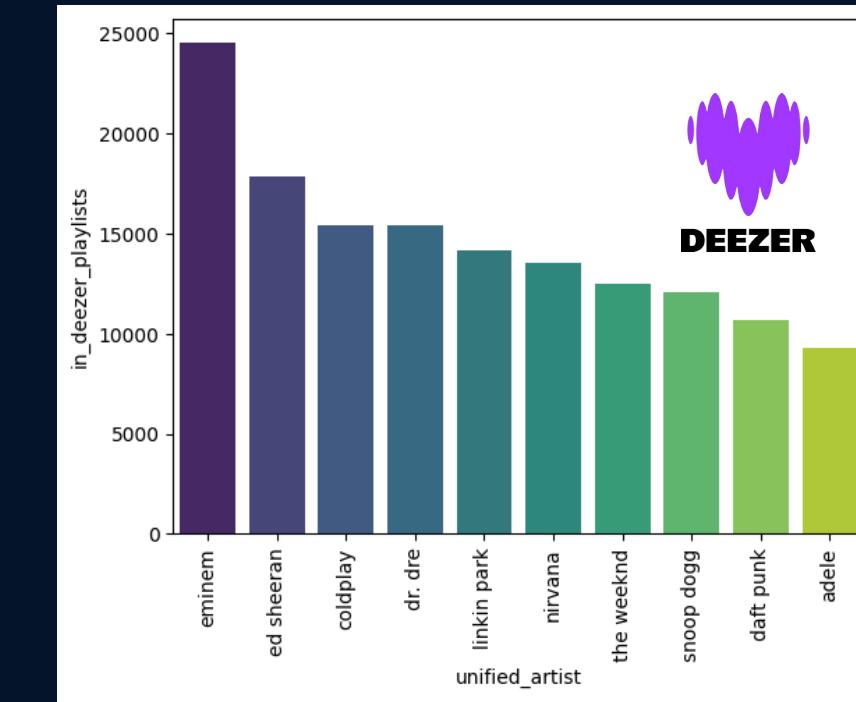
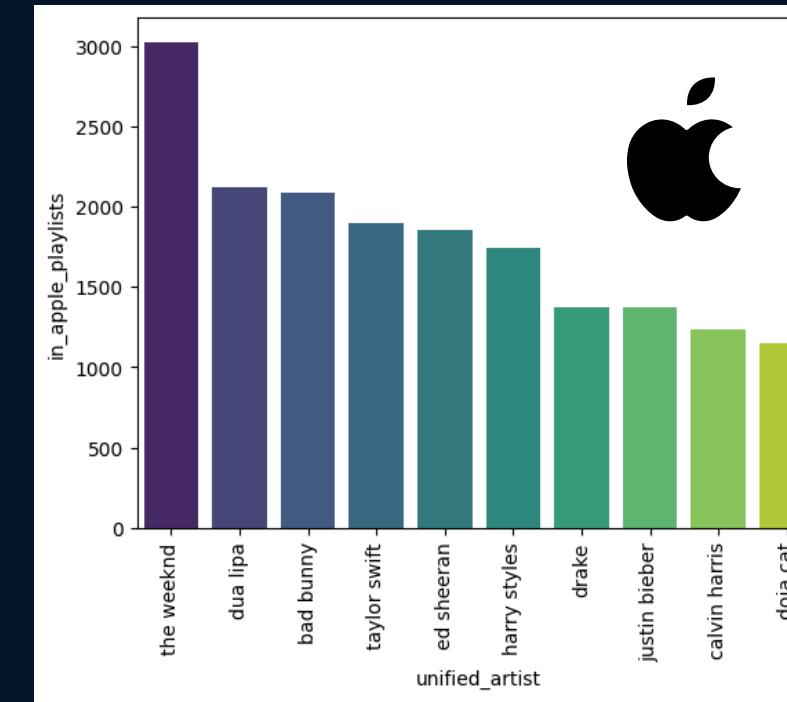
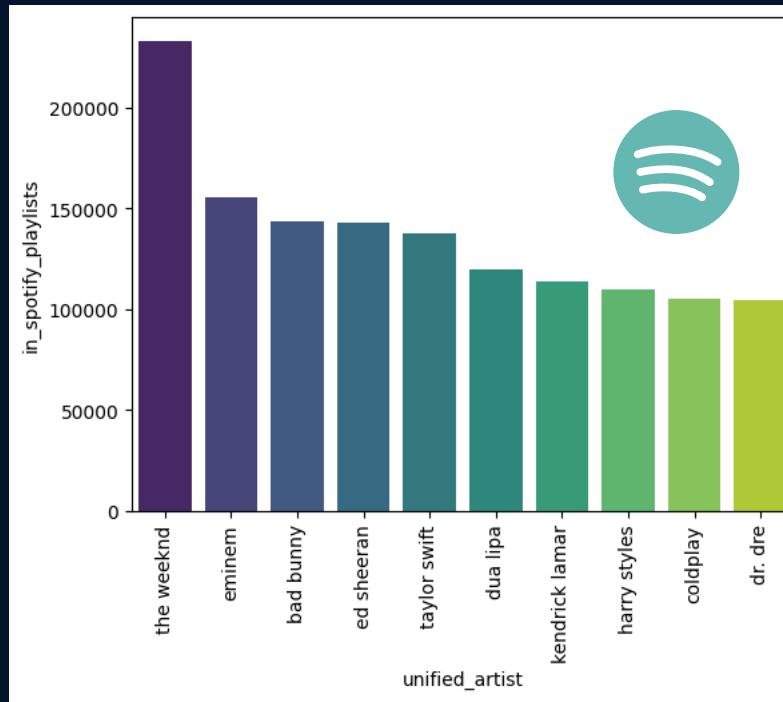
	danceability_%	valence_%	energy_%	acousticness_%
count	949.000000	949.000000	949.000000	949.000000
mean	66.951528	51.401475	64.266596	27.138040
std	14.644010	23.519855	16.577702	26.020296
min	23.000000	4.000000	9.000000	0.000000
25%	57.000000	32.000000	53.000000	6.000000
50%	69.000000	51.000000	66.000000	18.000000
75%	78.000000	70.000000	77.000000	43.000000
max	96.000000	97.000000	97.000000	97.000000
	instrumentalness_%	liveness_%	speechiness_%	
count	949.000000	949.000000	949.000000	
mean	1.566913	18.183351	10.146470	
std	8.405782	13.698921	9.930807	
min	0.000000	3.000000	2.000000	
25%	0.000000	10.000000	4.000000	
50%	0.000000	12.000000	6.000000	
75%	0.000000	23.000000	11.000000	
max	91.000000	97.000000	64.000000	

- DANCEABILITY: AVG. **AVG. 66.95% (MEDIAN: 69%)** → MOST SONGS ARE EASY TO DANCE TO, BUT A FEW LESS DANCEABLE SONGS LOWER THE AVERAGE
- VALENCE: **AVG. 51.4% (MEDIAN: 51%)** → BALANCE BETWEEN HAPPY AND SAD SONGS, WITH A SYMMETRIC DISTRIBUTION OF EMOTIONAL TONE
- ENERGY: AVG. 64.27% (MEDIAN: 66%) → SONGS GENERALLY HAVE MEDIUM-TO-HIGH ENERGY, BUT QUIETER SONGS SLIGHTLY REDUCE THE AVERAGE
- LIVENESS: AVG. **18.18% (MEDIAN: 13%, MAX: 97%)** → SOME SONGS WERE LIKELY PERFORMED LIVE



THE 2020S STAND OUT WITH 729 SONGS, SHOWING AN UNPRECEDENTED GROWTH IN MUSIC PRODUCTION DURING THE STREAMING AND DIGITAL ERA, COMPARED TO PREVIOUS DECADES WITH SIGNIFICANTLY LOWER SONG COUNTS

FIRST INSIGHT - HOW DO STREAMING PLATFORMS INFLUENCE ARTIST SUCCESS?

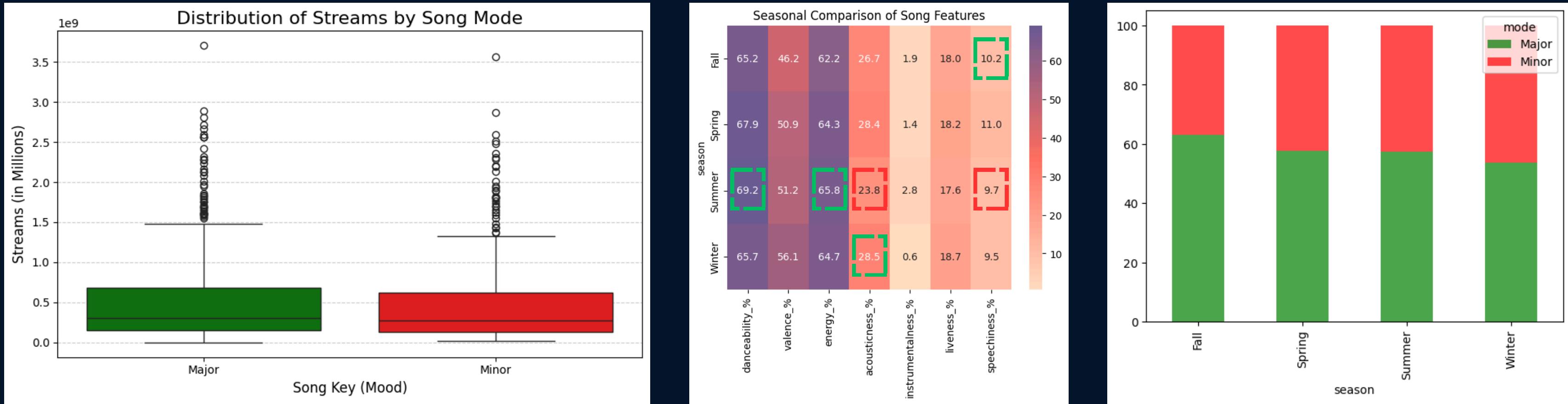


- **THE WEEKND IS UNDOUBTEDLY THE MOST DOMINANT ARTIST, LEADING ALMOST EVERY PLATFORM WITH A HIGH NUMBER OF APPEARANCES.**
- **DEEZER STANDS OUT BY FAVORING NOSTALGIC AND OLD-SCHOOL MUSIC, WITH ARTISTS LIKE DR. DRE AND SNOOP DOGG RESONATING WITH ITS AUDIENCE.**
- **SPOTIFY AND APPLE MUSIC PRIORITIZE MAINSTREAM AND CURRENT ARTISTS, SUCH AS TAYLOR SWIFT, DUA LIPA, AND BAD BUNNY, TO ATTRACT A YOUNGER AND BROADER AUDIENCE.**



Not only do musical features matter, but also platform preferences play a significant role in artist success

SECOND INSIGHT - HOW DO SEASONAL TRENDS SHAPE SONG FEATURES?



SONG PERFORMANCE BY MOOD (MAJOR VS. MINOR):

- MEDIAN STREAMS:** SONGS IN BOTH MAJOR (HAPPY) AND MINOR (SAD) MODES SHOW **SIMILAR AVERAGE PERFORMANCE**, HIGHLIGHTING THAT MOOD ALONE DOES NOT GUARANTEE SUCCESS.
- OUTLIERS:** HIGH-PERFORMING SONGS APPEAR IN BOTH CATEGORIES, PROVING THAT **BOTH MOODS CAN DRIVE SUCCESS**.

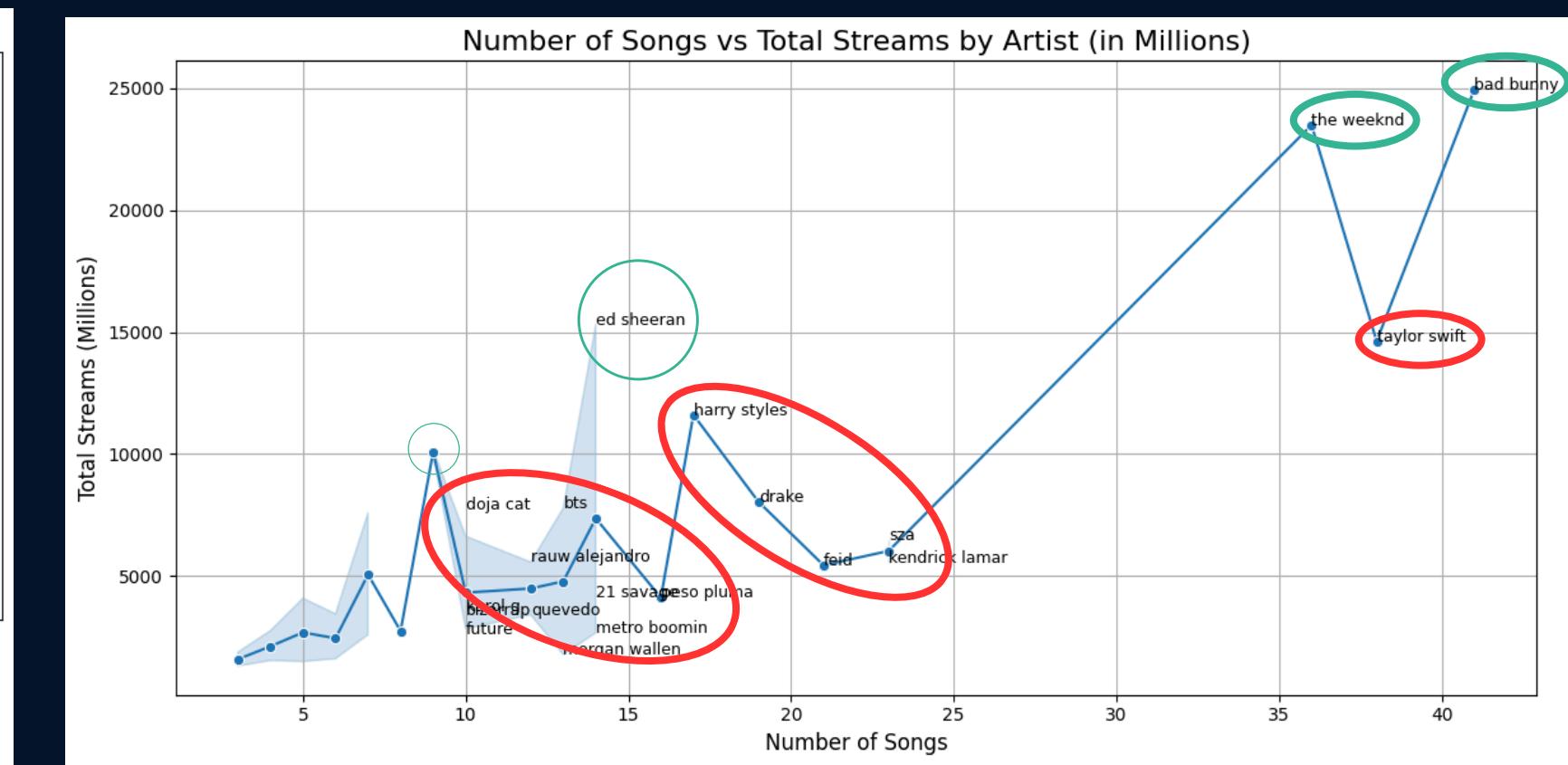
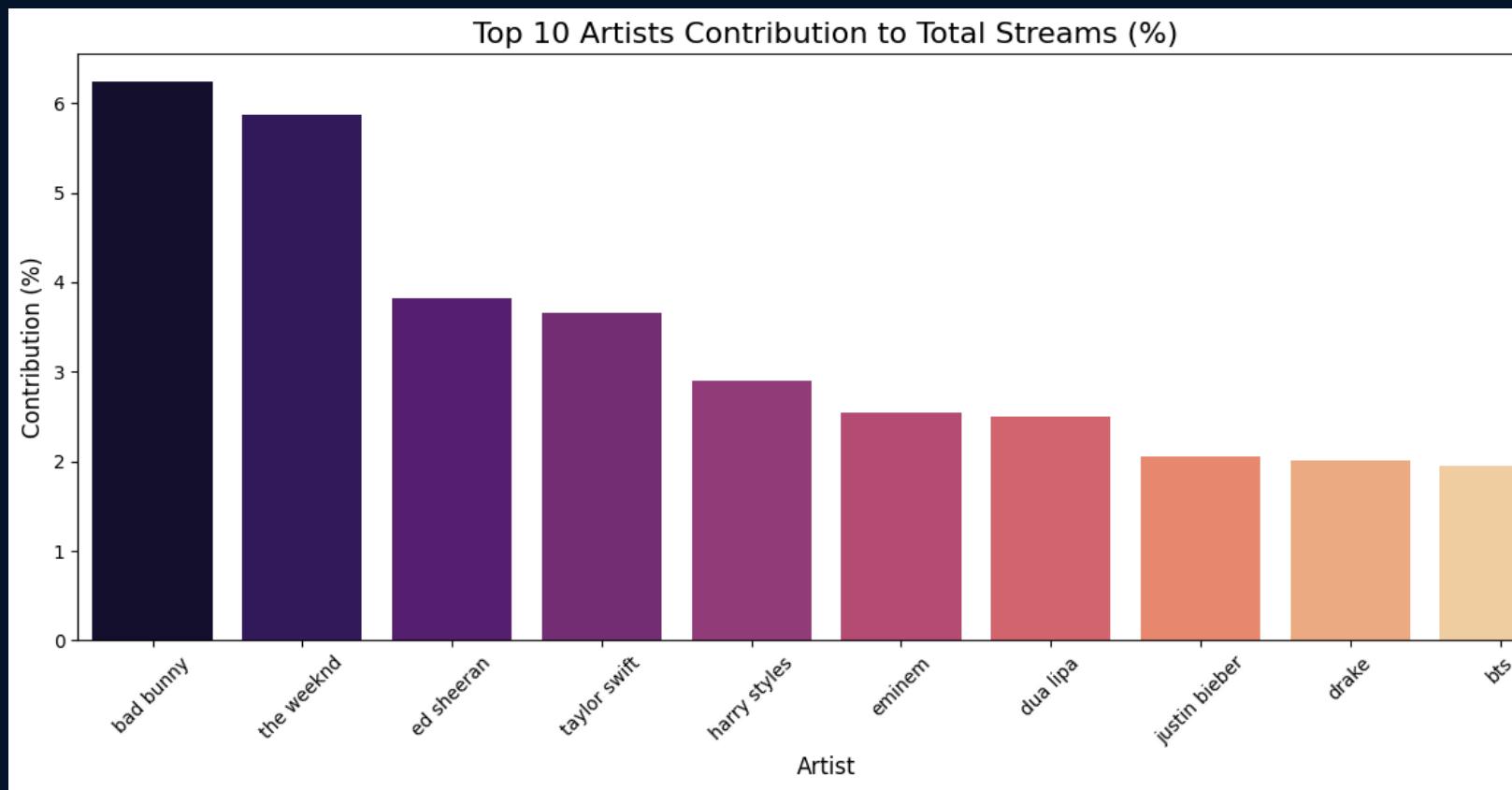
SEASONAL TRENDS IN SONG FEATURES:

- SUMMER:** SONGS HAVE THE HIGHEST **ENERGY (66.8%)** AND **DANCEABILITY (71%)**, INDICATING A PREFERENCE FOR UPBEAT AND SYNTHETIC TRACKS
- FALL:** THE HIGHEST **SPEECHINESS (11.3%)** SUGGESTS A TENDENCY FOR LYRICAL AND STORYTELLING SONGS, CONTRASTING WITH SUMMER'S LOWER VALUES (9.9%)
- WINTER:** **ACOUSTICNESS** PEAKS AT 27%, SHOWING A PREFERENCE FOR QUIET, INTIMATE SONGS DURING THIS SEASON

MEDIAN STREAMS: SONGS IN BOTH MAJOR (HAPPY) AND MINOR (SAD) MODES SHOW SIMILAR AVERAGE PERFORMANCE, HIGHLIGHTING THAT MOOD ALONE DOES NOT GUARANTEE SUCCESS.

OUTLIERS: HIGH-PERFORMING SONGS APPEAR IN BOTH CATEGORIES, PROVING THAT BOTH MOODS CAN DRIVE SUCCESS

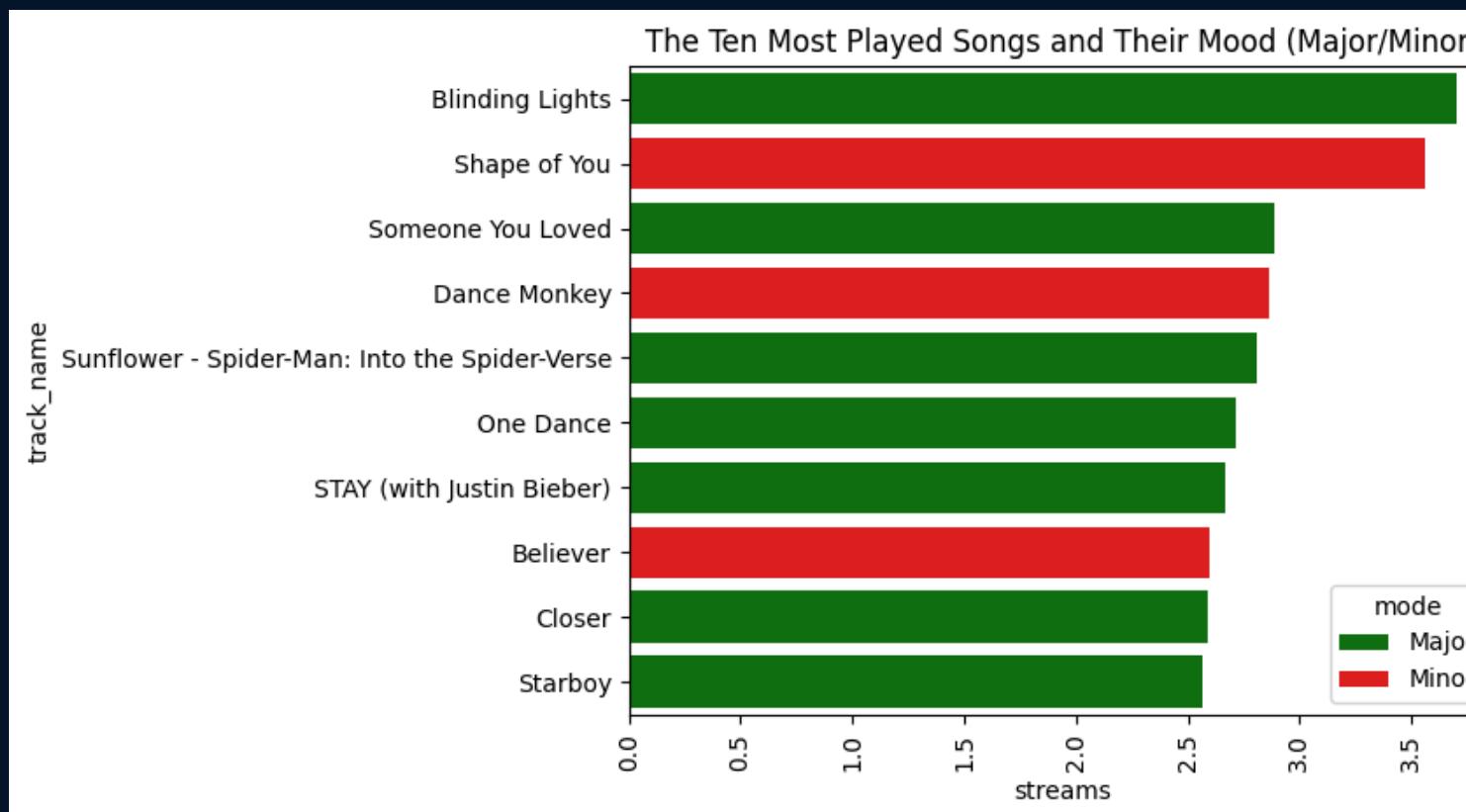
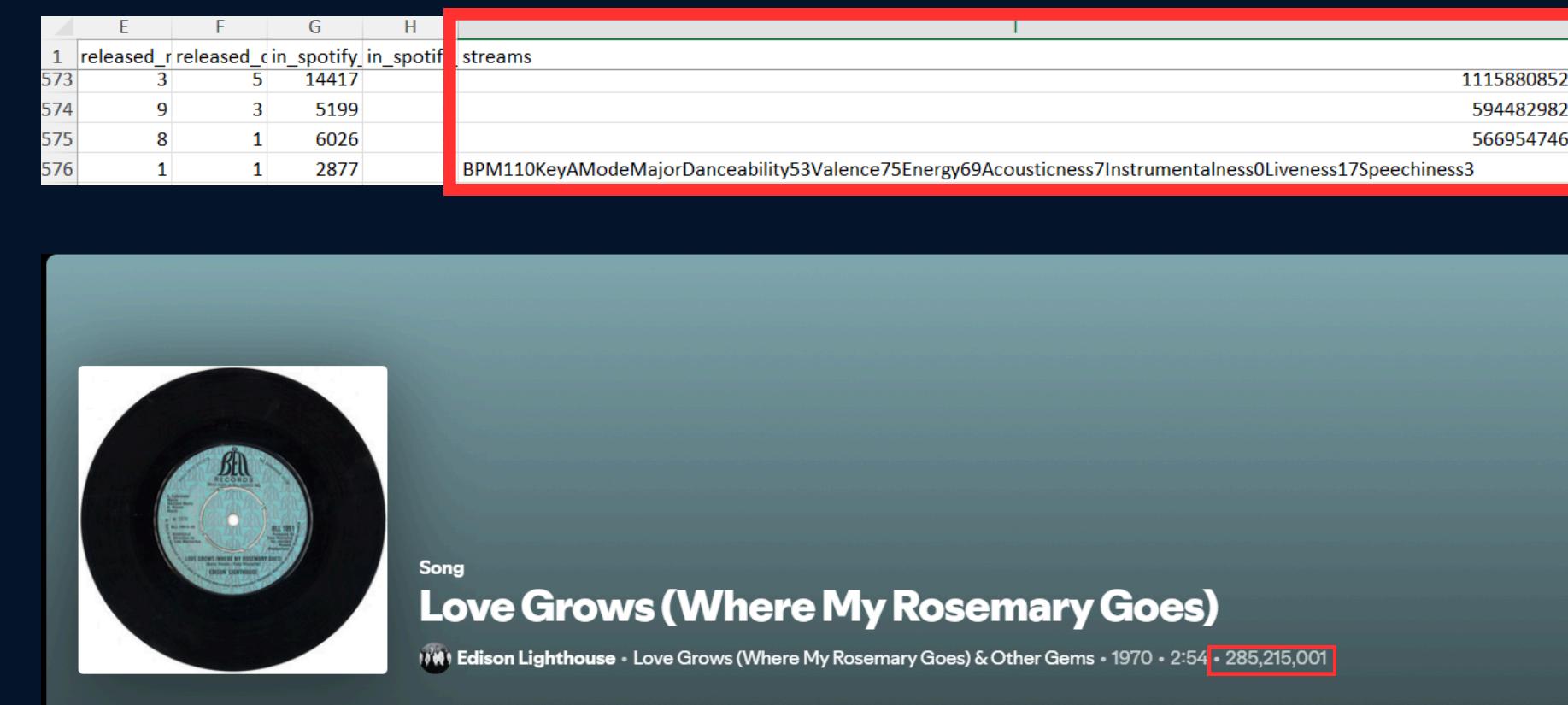
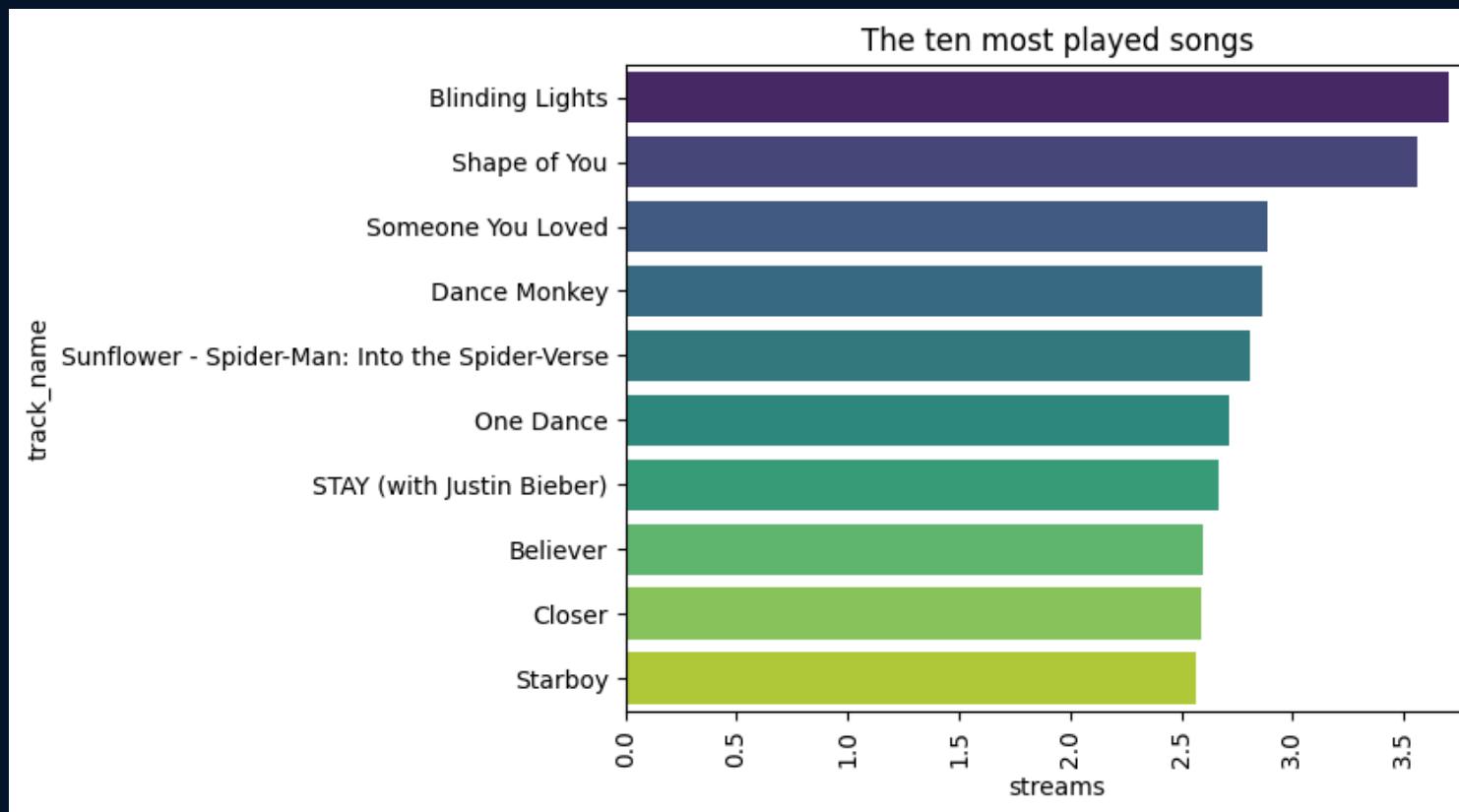
THIRD NSIGHT - HOW DO ARTIST STRATEGIES – QUANTITY VS. QUALITY – INFLUENCE STREAMING SUCCESS?



- BAD BUNNY AND THE WEEKND ACHIEVE MASSIVE SUCCESS BY COMBINING HIGH VOLUME OF SONGS WITH CONSISTENT QUALITY, PROVING THAT QUANTITY CAN DRIVE STREAMING SUCCESS
- ED SHEERAN - DESPITE RELEASING A SMALLER NUMBER OF SONGS, ED SHEERAN ACHIEVES MASSIVE STREAMS, PROVING THAT A FOCUS ON QUALITY CAN ALSO LEAD TO SIGNIFICANT SUCCESS
- **THERE ISN'T ALWAYS A DIRECT CORRELATION BETWEEN THE NUMBER OF SONGS RELEASED AND THE TOTAL STREAMS ACHIEVED**
- **BOTH STRATEGIES – PRODUCING MANY SONGS OR FOCUSING ON FEWER, HIGH-QUALITY HITS – CAN DRIVE SUCCESS, DEPENDING ON THE ARTIST'S BRAND AND AUDIENCE PREFERENCES**

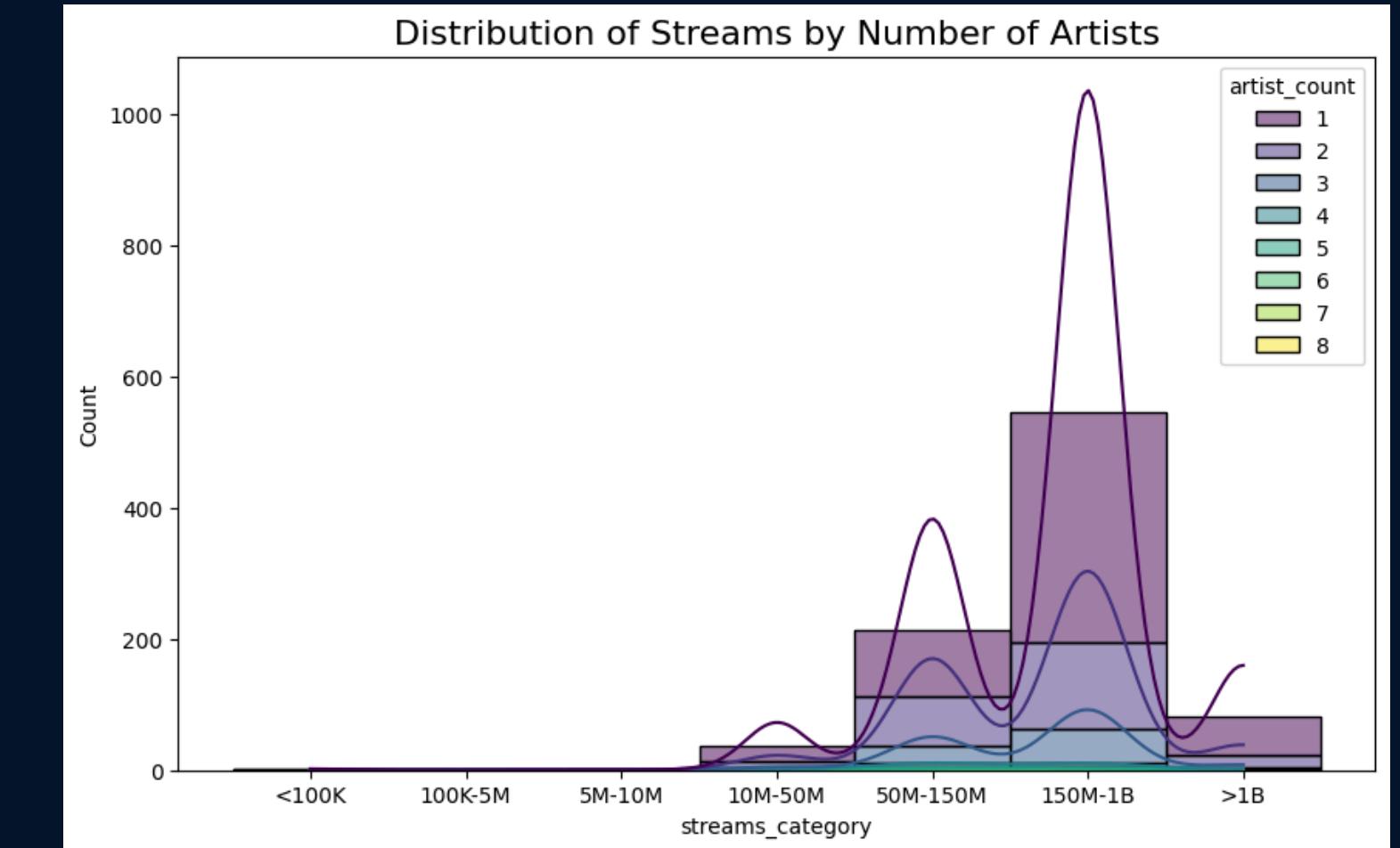
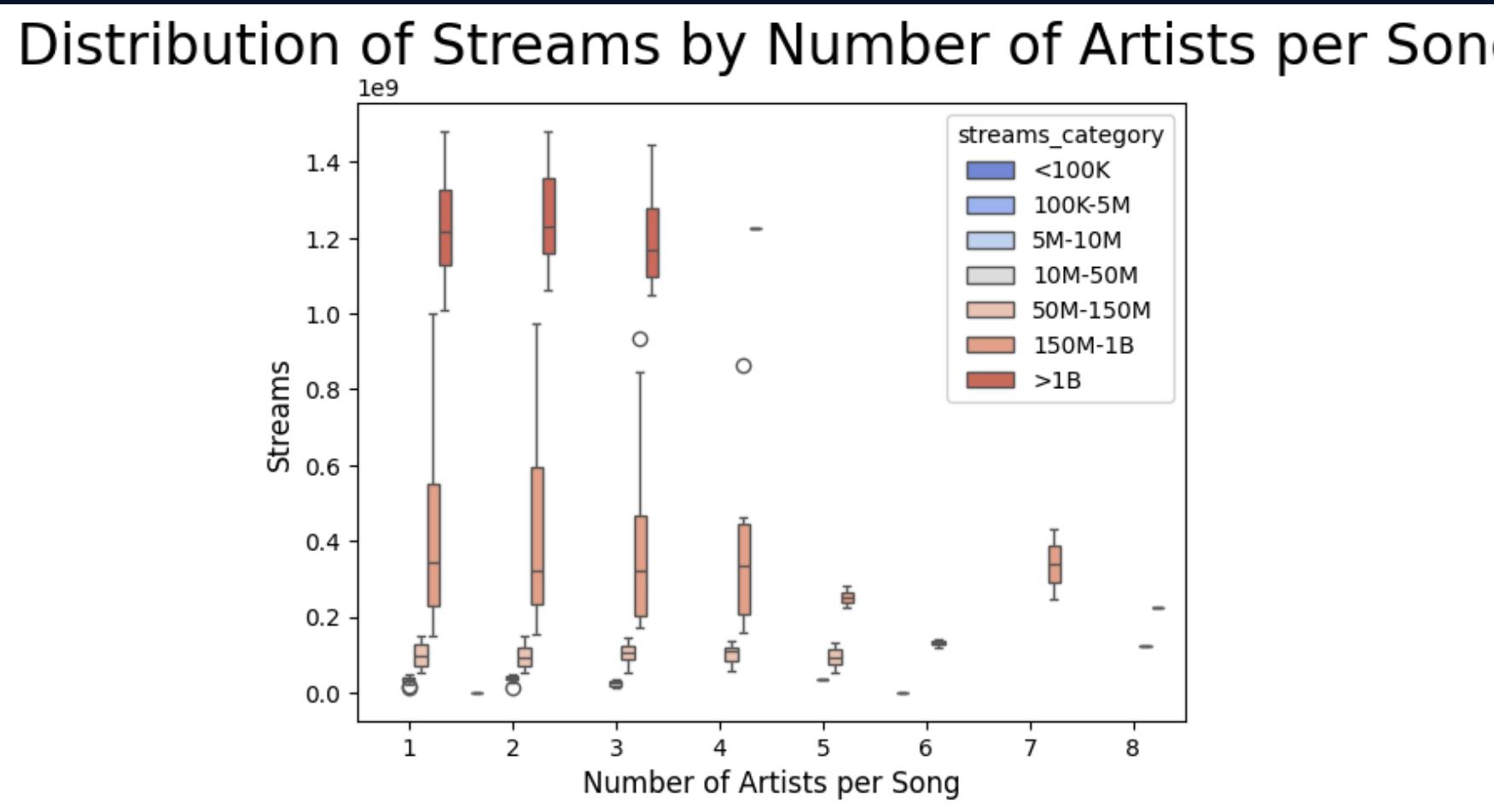


FOURTH INSIGHT - DO HAPPIER (MAJOR) OR SADDER (MINOR) SONGS PERFORM BETTER?



- "BLINDING LIGHTS" BY THE WEEKND LEADS WITH 3.7 BILLION STREAMS, HIGHLIGHTING ITS GLOBAL SUCCESS
- MOST OF THE TOP 10 SONGS ARE IN MAJOR MODE (GREEN), REPRESENTING HAPPIER, UPBEAT, AND ENERGETIC TRACKS
- WHILE MAJOR SONGS DOMINATE THE TOP-PERFORMING LIST, SUCCESS IS NOT EXCLUSIVELY TIED TO MOOD. BOTH MAJOR (HAPPIER) AND MINOR (SADDER) SONGS CAN ACHIEVE HIGH POPULARITY, SUGGESTING THAT OTHER FACTORS, SUCH AS ARTIST BRANDING, SONG FEATURES, AND TIMING, ALSO CONTRIBUTE TO STREAMING SUCCESS

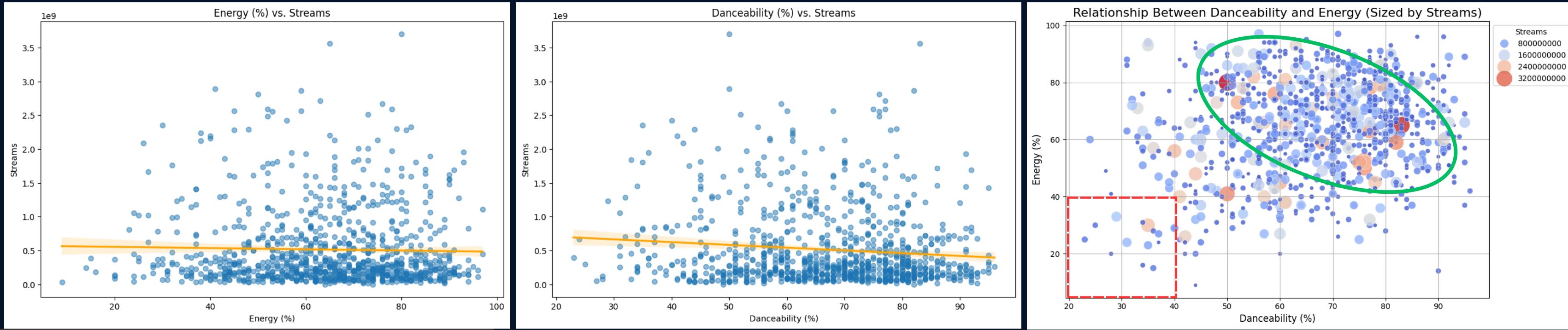
FIFTH INSIGHT - HOW DOES THE NUMBER OF ARTISTS ON A SONG INFLUENCE POPULARITY?



- MOST SONGS WITH OVER 1 BILLION STREAMS FEATURE ONE OR TWO ARTISTS, HIGHLIGHTING THE POWER OF STRONG PERSONAL BRANDING AND FAN ENGAGEMENT
- WHILE COLLABORATIONS CAN ATTRACT DIVERSE AUDIENCES, SONGS WITH THREE OR MORE ARTISTS TEND TO PERFORM LESS SUCCESSFULLY IN TERMS OF STREAMS.

SOLO ARTISTS DOMINATE STREAMING CHARTS AND ACHIEVE THE BIGGEST HITS THANKS TO THEIR ABILITY TO BUILD STRONG PERSONAL BRANDS AND CONNECT DIRECTLY WITH THEIR FANBASES

SIXTH INSIGHT - IS SUCCESS DETERMINED BY SINGLE FEATURES OR THEIR COMBINATION?

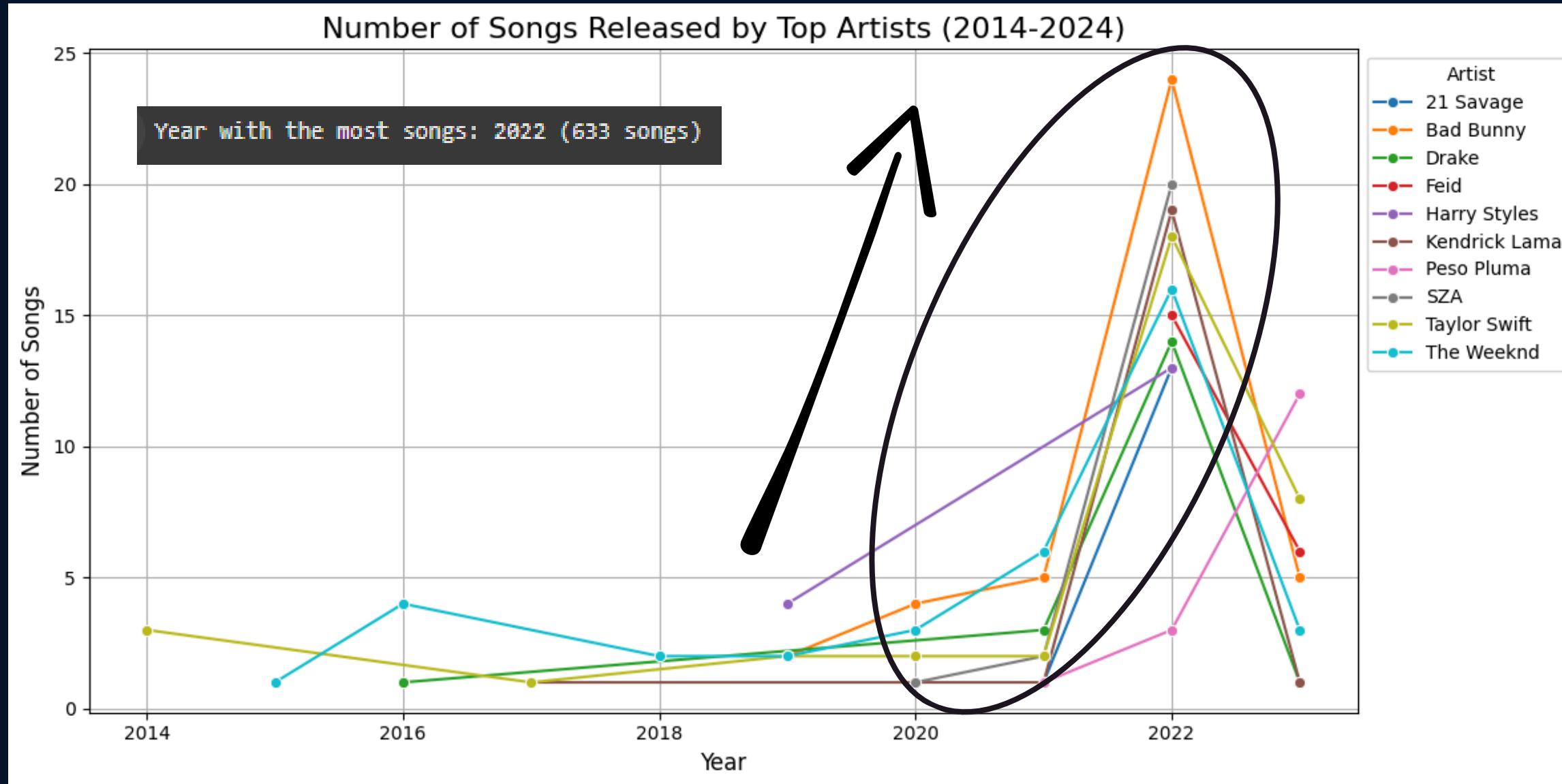


Regression Coefficients: [-204245.29084613 -4030699.69006152]

Intercept: 796764481.0725533

- THE GRAPHS SHOW THAT ENERGY (%) AND DANCEABILITY (%) ALONE DO NOT STRONGLY INFLUENCE THE NUMBER OF STREAMS.
- IN FACT, WHEN ONE FEATURE INCREASES ON ITS OWN, THE AVERAGE NUMBER OF STREAMS TENDS TO DROP.
- THE GRAPH ON THE RIGHT SHOWS THAT THE MOST SUCCESSFUL SONGS COMBINE HIGHER LEVELS OF BOTH ENERGY AND DANCEABILITY.
- THIS MEANS THAT SUCCESS COMES FROM THE BALANCE AND COMBINATION OF FEATURES, NOT FROM FOCUSING ON A SINGLE ATTRIBUTE.
- **SONGS THAT PERFORM BEST ACHIEVE SUCCESS BY EFFECTIVELY BALANCING MULTIPLE FEATURES, RATHER THAN RELYING ON JUST ONE.**

SEVENTH INSIGHT - HOW DID THE COVID-19 PANDEMIC IMPACT MUSIC TRENDS?



DAWN FM

- ARTIST - THE WEEKEND
- RECORDED - 2020-2021
- RELEASED - JANUARY 7, 2022



UN VERANO SIN TI

- ARTIST - BAD BUNNY
- RECORDED - 2019-2022
- RELEASED - MAY 6, 2022



HER LOSS

- ARTISTS - 21 SAVAGE & DRAKE
- RECORDED - 2020-2022
- RELEASED - NOVEMBER 4, 2022

- LEADING ARTISTS SUCH AS THE WEEKND, BAD BUNNY, AND DRAKE RELEASED ICONIC ALBUMS, DRIVING SIGNIFICANT SUCCESS ON STREAMING PLATFORMS
- THE PANDEMIC CREATED A UNIQUE OPPORTUNITY FOR ARTISTS TO PRODUCE AND RELEASE MUSIC, CAPITALIZING ON LISTENERS' INCREASED DEMAND FOR ENTERTAINMENT DURING LOCKDOWNS
- THIS HIGHLIGHTS HOW EXTERNAL FACTORS, SUCH AS GLOBAL EVENTS, CAN INFLUENCE BOTH ARTIST OUTPUT AND STREAMING SUCCESS

THE POST-PANDEMIC ERA SPARKED UNPRECEDENTED CREATIVITY, WITH 2022 EMERGING AS A BREAKOUT YEAR FOR MUSIC PRODUCTION

CONCLUSION

MOOD AND SUCCESS

SONGS IN "MAJOR" (HAPPY) AND "MINOR" (SAD) KEYS PERFORM SIMILARLY, SHOWING THAT MOOD ALONE DOES NOT GUARANTEE SUCCESS.

FEATURE IMPACT

A SONG'S SUCCESS DEPENDS ON THE BALANCE AND COMBINATION OF FEATURES, LIKE ENERGY AND DANCEABILITY, RATHER THAN FOCUSING ON A SINGLE TRAIT.

SOLO SONGS

SOLO ARTISTS DOMINATE STREAMING CHARTS, DEMONSTRATING THE POWER OF A SINGLE ARTIST'S BRANDING AND THEIR ABILITY TO CONNECT WITH A DEDICATED FANBASE.

NUMBER OF SONGS VS. STREAMS

WHILE THERE IS A POSITIVE CORRELATION BETWEEN THE NUMBER OF SONGS AND STREAMS, SOME ARTISTS ACHIEVE MASSIVE SUCCESS WITH FEWER SONGS, EMPHASIZING THE IMPORTANCE OF QUALITY OVER QUANTITY.

SEASONAL INFLUENCE

SUMMER SONGS ARE MORE ENERGETIC AND DANCEABLE, APPEALING TO UPBEAT SEASONAL MOODS. WINTER SONGS TEND TO BE QUIETER AND MORE ACOUSTIC, RESONATING WITH LISTENERS' PREFERENCES.

COVID-19 IMPACT

THE PANDEMIC SPARKED UNPRECEDENTED CREATIVITY, WITH ARTISTS RECORDING SONGS DURING LOCKDOWNS AND RELEASING THEM AFTERWARD. THIS LED TO A SURGE IN MUSIC PRODUCTION AND INFLUENCED POST-PANDEMIC STREAMING TRENDS.

OVERALL INSIGHT:

THE SUCCESS OF SONGS AND ARTISTS ON STREAMING PLATFORMS IS DRIVEN BY A COMBINATION OF BALANCED FEATURES, ARTIST STRATEGIES (SOLO BRANDING VS. QUANTITY), SEASONAL TRENDS, AND EXTERNAL INFLUENCES LIKE GLOBAL EVENTS.

