

The Perfect Song

Introduction

Our project is an investigation into the traits that make a hit record. We chose this topic as we both have a keen interest in music and feel that the music industry is a fascinating aspect of our culture. It is diverse, free and artistic and so we felt that analysing this area through the lens of mathematics and statistics would be challenging and interesting. We also felt that developing a formula for the “Perfect Song” would give us a deeper insight into the world of Chart Music and even allow us to attempt to have a hit record.

Research

For the purpose of this project, we wanted to look at trends in Irish hit records and compare them to other countries. We chose the UK as they are our nearest neighbours and have a thriving music scene. We also chose two other influential nations, Germany and USA. From our early research, we found that Asian and African countries have hugely diverse music to the other countries and would not allow us to make a good comparison.

In order to gather our data, we needed to decide on what parameters we were to put on our data. We chose to look at the top 10 records in 2018 for each of the aforementioned nations. We chose 2018 as that would indicate what is popular currently. We decided to compare age, gender and nationality of musician, genre of music, month of release of record, structure of record, type of song and its theme.

We gathered our secondary data from reliable online sources (the official charts for each of the countries).

As much of our data was descriptive statistics, we decided that measures of centre and measures of spread of our data would be the most applicable for our project.

Language

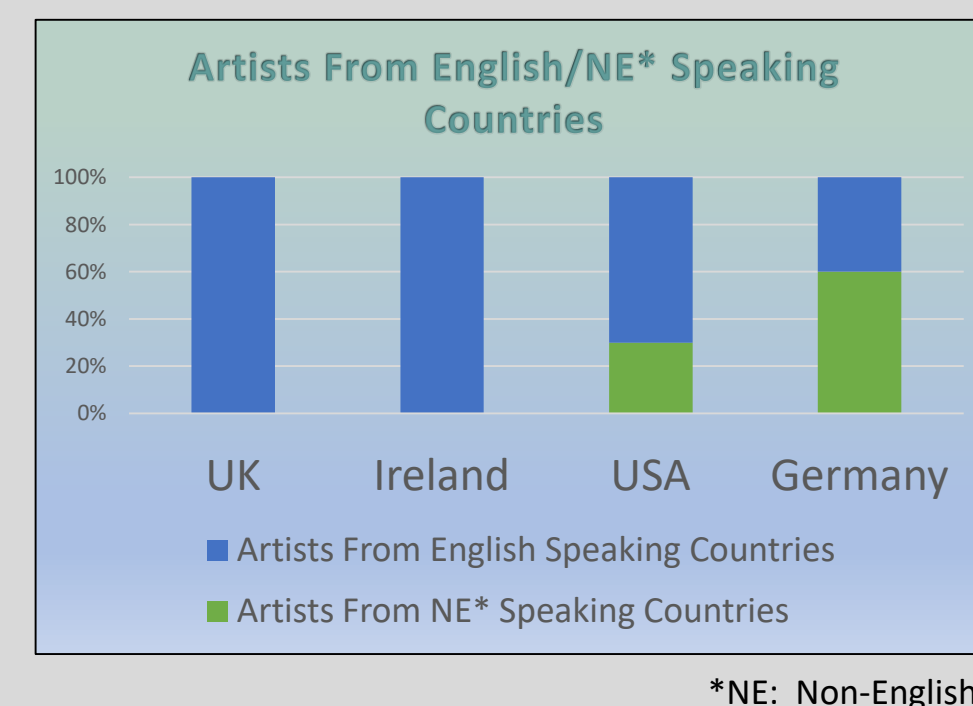
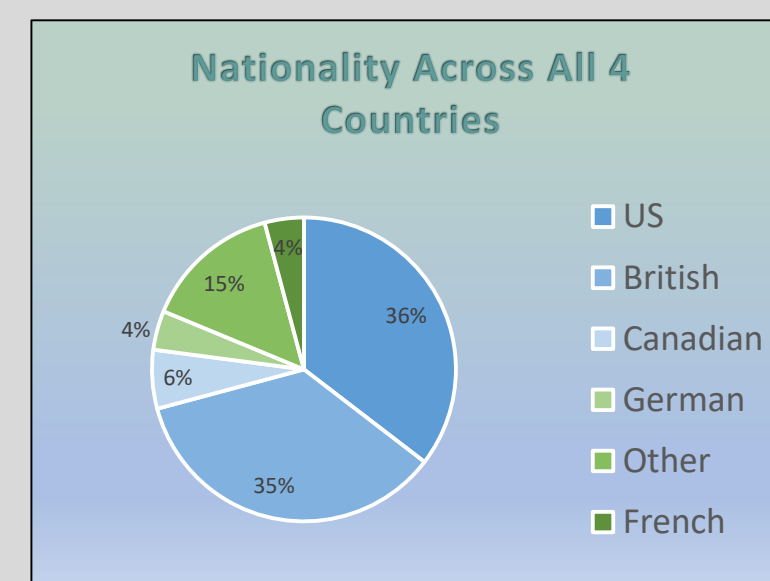


Songs in English was the modal language used in songs and accounted for the vast majority of songs in the top 10 lists of records (83%).

Other languages that appeared (in descending order) were Spanish, German, French and Italian. None of the songs were written in a Non-Western European language. It is worth noting, however, that the parts of the songs in Spanish in the US charts were both in English and Spanish.

Nationality

In general, it appears that if the artist comes from a country where English is the primary language (i.e. UK, USA, Canada, etc.), they will be more likely to succeed in the charts. Combining data from the four countries, we found that 77% of artists were from an English speaking country, with most of them being from the UK and US. However, in Ireland and the UK, 100% of the top 10 best performing songs were by artists from English speaking countries. This differed from the US where it was 70%, and Germany where the majority (60%) of the musicians were from non-English speaking countries.



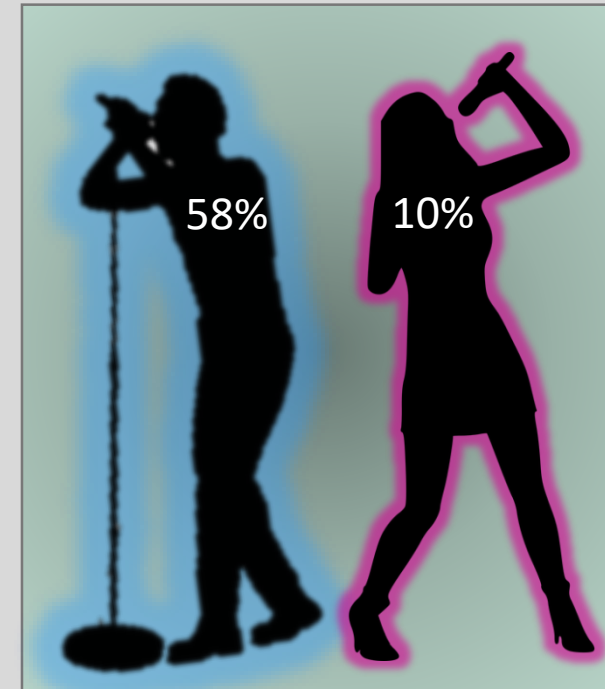
Time of Release

For this aspect, the results were again quite similar between Ireland and the UK, while the US and Germany differed. In Ireland, the most frequent months of release of the top 10 songs were January, March and May, in the UK – January, while in the US and Germany it was September. Overall, in Ireland and the UK most songs were released in the first quarter of the year, while in the US and Germany most were released in the third quarter of the year.



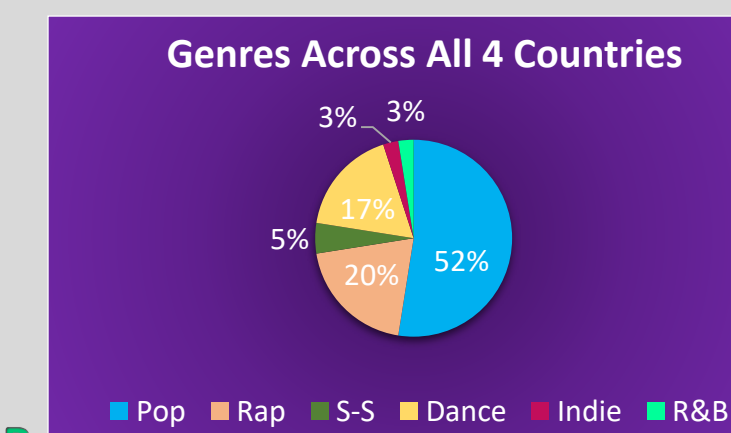
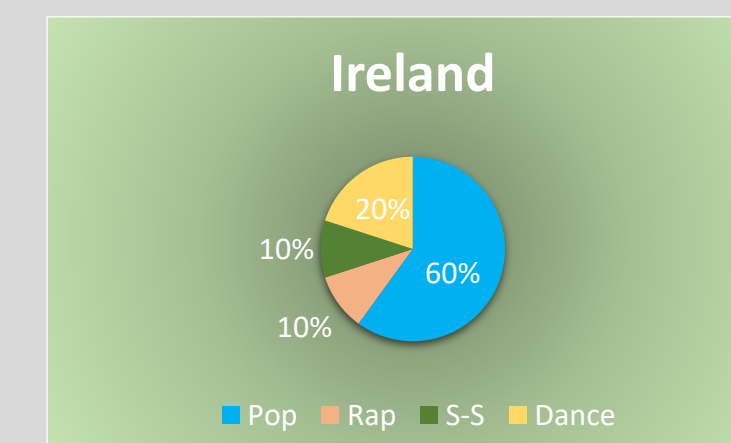
Gender, Age

Looking at gender of the top 10 song's artists, we found that the charts were more populated by men than women, with 58% of songs by men, 10% by women while 32% were songs by either a band/group of men and women or by a male musician in collaboration with a female musician, and vice versa. Overall, songs by male musicians outperformed those by women, although songs by men and women also had a high success rate. The age of musicians ranged from 19-48 years old. The overall mean age was 29.



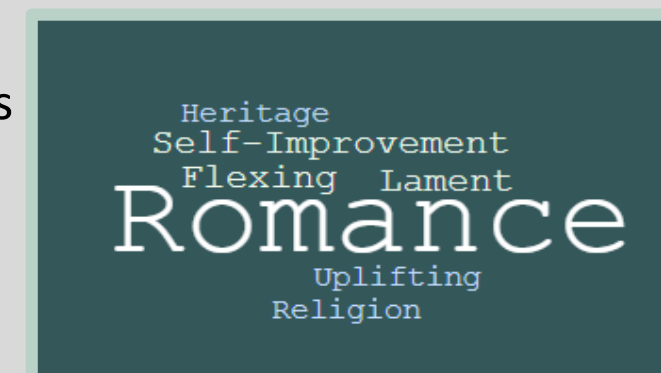
Genre

It is evident that the charts are mostly dominated by **pop** songs. In Ireland and the UK, **pop** songs made up 60% of the top 10 songs in the charts. Across the four countries, over half the songs were from the **pop** genre. Overall, Ireland and the UK had very similar results. However, the US top 10 songs from the charts were 60% **rap** (followed by Germany with 20%, whereas in Ireland and the UK there were either none or very few songs from the **rap** genre). **Pop** was still very popular in the US charts, where 4 out of the top 10 songs of the charts were **pop**. Other genres that performed well in 2018 were **Dance**, **S-S** (singer-songwriter), **Indie** and **R&B**.



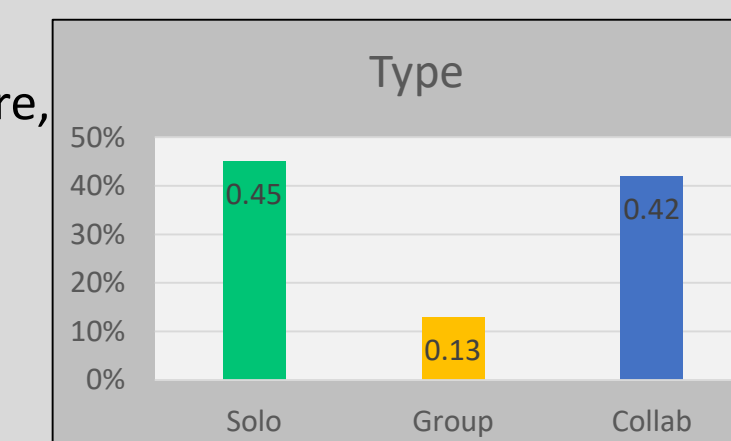
Theme

The most frequently occurring theme (over half) throughout the top 10 songs from the charts was *romance*. Most rap songs' theme was *flexing* (“showing-off”). Other songs were about *heritage*, *self-improvement*, *religion* or they were *uplifting* and *lamenting* songs.



Structure, Type

It was difficult to classify the structure of many of the rap songs, and some other songs were not structured in a conventional manner. However, the best performing songs (this being pop, romance songs) were mostly written in a Verse-Bridge-Chorus (VBC) structure (although most in the US were Verse-Chorus structure). 58% of songs across the Four countries were written in a VBC structure, followed by Verse-Chorus and then other structure types. As for the type (whether it was a solo song, group or in collaboration with another artist), the results are visible in the graph. Collab songs enjoyed popularity in Germany and the US, where they made up the majority of songs.



Results

By analysing the measures of centre and spread that we extracted from our research, we were able to deduce a formula for the best song that could be released in each chosen country.

We felt that by finding the modal or mean outcome for each variable we could calculate what properties the most successful and profitable song would have. There were no outliers in our data. If we collected data from years other than 2018, we may have observed some outliers. This could be considered a limitation to our study.

Conclusion

The formulae that we have developed are as follows:

IRELAND

A pop song about romance with a verse, bridge, chorus structure, released by a British male or female, solo artist in January.

UK

A pop song about romance with a verse, bridge, chorus structure, released by a British male solo artist in January, May or March.

USA

A pop or rap song about romance with a verse, chorus structure, released by an American male artist in collaboration with another artist in September.

GERMANY

A pop song about romance with a verse, bridge, chorus structure, released by a British male in collaboration with another artist in September.

Overall

A pop song about romance with a verse, bridge, chorus structure, released by a British male, 25-30 years old in collaboration with another artist or solo released in the 1st or 3rd quarter of the year.

Recommendation

We recommend that any artist thinking of releasing music should follow our formulae as closely as possible but we also recognise that music should be free and so these results are not the be all and end all. We are also aware that anyone can succeed in the music industry. These are just guidelines to success for aspiring musicians to increase chances of their music appearing at the top of the charts.