

Gender and the *Billboard* Top 40 Charts between 2000 and 2022

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Abstract

Is there an inherent bias towards male artists in the music industry? Evidence has been shown in previous studies, the most recent being from 2017, that there may be bias towards male artists appearing in Billboard Magazine's Hot 100 list. This study not only updates previous data to include 2017 through 2022, but also looks at the top 40 charts on a week-by-week basis as opposed to the year-end charts that other studies used for their data.

Looking at the data, we've realized that the claim of bias towards male artists may not be as cut and dry as other studies have suggested. In certain eras, many male artists who frequently top the charts are actually those marketed to the demographic of young female listeners. The data supports an argument that while male artists may dominate the Billboard charts, it is in fact female audiences that drive that domination.

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Introduction

Since the early days of Rock ‘n Roll, *Billboard* Magazine has been the gold standard for reporting on news and events in popular music. Since August 4, 1958, *Billboard* has published its *Hot 100* list of the most popular songs in the U.S. for the previous week. Music fans have been captivated by who makes the *Hot 100* and who will make the coveted #1 spot, especially since 1970 when Casey Kasem created and hosted the first *American Top 40* radio show which highlighted the top 40 of *Billboard*’s *Hot 100*.

While studying *Billboard*, it is essential to understand the method that they use to collect data and determine the rankings. *Billboard* uses a device called Nielson SoundScan to track sales. The technology is used like a built-in code, so when a registered SoundScan store is used to purchase music, the device collects this data (Sernoe 640). *Billboard* additionally pays popular radio stations to use the Broadcast Data System. This system tracks the songs these radio stations play and compiles a weekly list of their popular songs. Though *Billboard*’s rankings are not thoroughly accurate, it is one of the most widely regarded music indexes in North America.

By taking a cursory glance at the *Hot 100*, one may see that the chart is dominated by male artists. But is this always the case? Is there an inherent gender bias in the representation of artists in the charts? If so, is there a reason? The purpose of this study was to look at the weekly *Hot 100* to see what, if any, gender bias may exist.

In a study from 2017, Lafrance, et al. examined data on the race and gender of artists on *Billboard*’s year-end singles sales and airplay charts. These two separate charts were studied because they represented what audiences choose to listen to (sales) and what music is chosen for

them to listen to (airplay). The investigators assumed that the “rise of women” of the late nineties would play a role in the dominance of the gender throughout the industry. They looked at the charts from 1997-2007 and concluded that this was not the case, and in fact, the data showed the opposite effect. The “rise of women” did not correlate to a rise in women artists represented on the charts. However, women identifying as ethnicities other than “white” or “black” saw a significant increase of popularity in the music industry.

A second study, conducted by Lafrance, Worcester, and Burns in 2011, examined just the demographic of gender and how it correlates to the popularity in music. While they used the same timeframe (1997-2007), they used the *Billboard* year-end *Hot 100* chart for their data. They concluded that although, there was a significant rise in the popularity of women in the music industry, men still dominated the charts.

In our current study, we examined the *Billboard Hot 100* weekly charts instead of year end charts and covered the years 2000-2022. In doing so, this study will contribute to the existing research on the relationship between *Billboard* charts and gender (Lafrance, Worcester, and Burns; Wells, “Gender”) by bringing new, more detailed, and updated statistical data to light.

Methodology

We worked with one data set: *Billboard* Hot 100 charts. To make the data more manageable, the data was manipulated to the top 40 charts over a compilation of 23 years, 1200 weeks. According to previous research, there was no found statistical different between top 100 song samples and the top 40 song samples.

Given the trends that are recorded through the *Billboard* charts, it is crucial to discuss the coding methods used throughout this study. The coding source, Python, was used to compile a

code that pulls the data off of *Billboard's* API to Excel. Each sheet consists of the artists name, the song name, the peak rank the song hits, the duration of the song on the charts, and the rank of the song for each week.

Due to the complication and possible inaccuracy of encoding gender for the *Billboard* API, the data was pulled off the internet by hand using different codes. Each code recognizes the artist(s) gender and the grouping or feature of the song. The coding list is compiled of different letters that symbolize different genders according to their grouping; F indicates female, M indicates male, MG indicates a male group, FG indicates a female group, XG indicates a mixed gender group, FSG consists of a group of females that do not typically make music together, MSG which is a group of males that are not in an organized group, XSG which is a group of mixed gendered individuals not in an organized group, and the addition of the plus sign indicates if the song has a feature where the letter following indicates who is featured. Due to the complications of indicating a person's gender and associating it to trends, the data was limited to the sex identified at birth.

Looking at the weekly charts rather than the year-end charts allows for more detailed, precise trendlines that occur throughout the year. This allows for the analysis of how gender fluxes in and out week-by-week, allowing for a more detailed analysis of what actually occurs throughout *Billboard's* yearly records.

Limitations

Due to the statistical characteristics of this study, like other studies based of the *Billboard* charts (Wells, "Women"), the questions this research can ask, or answer is limited. Most of the variables used in this study are not quantitative, but qualitative, which does not allow this study

to make inferences outside of this research. This data can only apply to the influence of gender on the music industry throughout the listed timeline and cannot be used to justify or hypothesize the gender trends in other time periods.

Findings: Gender Frequencies

Throughout the 23 years, the research detailed that, every year, there was a higher number of men than women frequency. The more recent the year was, the more popularity the female artists received. Over the course of a little over two decades, male artists averaged about 26.6 per week. That makes about 66% of the music charts from 2000 to 2022 male artists. That other 34% consists of both females and mixed artists, creating a wide difference between male artist popularity compared to female artist popularity.

In the early 2000's until about 2009, with the exception of 2006, mixed gender groups were not very popular. In 2009, the mixed groups picked up some popularity averaging about 10%-15% a week on the music charts. In 2009, the women artists experienced the first significant leap of popularity at the end of the year, which correlates to Britney Spears' album release "The Singles Collection" and Katy Perry's album release "MTV Unplugged." In 2011, there was a spike of popularity of female artists on the charts which can be correlated to the released of Lady Gaga's Album "Born This Way" and Rihanna's late 2010 released album "Loud." In 2022, there was a significant jump at the beginning of November on the number of female artists popping up on the charts. At the time of this trend jump, Taylor Swift released an album called "Midnight," where Taylor appeared on the Top 5 charts for two weeks, but all her songs stayed between the first 15 charts for several weeks. Contrary to the popularity of women artists during these years, in both 2017 and 2018, the popularity of female artists decreased by almost 10%. In the early 2000's the topmost male artists typically consisted of 'NSYNC,

Matchbox Twenty, Savage Garden, Smash Mouth, Backstreet Boys, and the Goo Goo Dolls, all of which are male groups.

Discussion

These findings indicate that male hits exceed female hits and are overly dominating the music charts between 2000 and 2022. The popularity of the male artists shifts between artists over the two decades depending on the popular genres at the time, like early 2000's boy bands were popular unlike the mid to late 2010's had more popular R&B and rap artists. The findings can be separated out into the larger finds that:

1. male artists had consistent extreme highs and almost never dipped below half of the music charts, in comparison to female artists;
2. male artist's worst years were always extremely close to female artists best years; and
3. when male artists are more popular, the artists typically surpass the frequency of female artists greatly.

This data supports Wells claim that "there is a very long way to go before women reach equality with men on the charts" ("Nationality", 229). After analyzing the trends in the data, a separate hypothesis was then questioned. Although the males dominate the music charts, what is driving that domination?

After researching the relationship and characteristics of boy bands, it was found that females influence the popularity of boy bands. The range of females are called "teenyboppers" which consists of females anywhere from seven years old to teenage/young adulthood. The popularity of boy bands is directly related to not only their music but their conventionally attractiveness that feeds the love of these groups to women and girls (Lyons, 46). Additional

research concludes that most boy bands were created specifically for the so-called “female gaze” (Bailey, 4). This correlation, specifically for the early 2000’s, justifies the prominence of the male artists on the music charts.

Additionally, another correlation between increase of female artists popularity throughout a hand full of years also goes back to the female listener influence. Each year that there is a significant increase in women, it correlates to female artist(s) releasing a new album, which is typically released with the intention of reaching the female audience. For example, Taylor Swift or Rihanna releasing an album reaches more than just the female community, but within the the female community, these artists find the most of their popularity and fanbase (Serra, 16).

Conclusion

This study of the top 40 of *Billboard’s Hot 100* charts for the period 2000 to 2022 allows the claim that male artists continue to dominate the world of popular music. The data infers there is still gender inequality within the popular music industry, and when looking at the ratio of female artists to male artists in the industry (with slightly more female artists than male artists), the difference between the popularity of male to female artists highly supports this hypothesis. However, with the popularity of male artists and spikes of popularity for female artists, research allows for the claim that the influence of the female audience or “female-gaze” (Bailey, 4) may partially contribute to dominance of male artists.

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References

- Bailey, D. (2016). *Beefing up the Beefcake: Male Objectification, Boy Bands, and the Socialized Female Gaze*. Scripps Senior Theses. Retrieved March 27, 2023, from https://scholarship.claremont.edu/cgi/viewcontent.cgi?article=1815&context=scripps_theses
- Lafrance, M., Scheibling, C., Burns, L., & Durr, J. (2017). Race, Gender, and the *Billboard* Top 40 Charts between 1997 and 2007. *Popular Music and Society*, 41(5), 522–538. <https://doi.org/10.1080/03007766.2017.1377588>
- Lafrance, M., Worcester, L., & Burns, L. (2011). Gender and the *Billboard* Top 40 Charts between 1997 and 2007. *Popular Music and Society*, 34(5), 557–570. <https://doi.org/10.1080/03007766.2010.522827>
- Lyons, A. (2020, December). *One direction infection: Media representations of boy bands and their fans*. Retrieved March 27, 2023, from https://repositories.lib.utexas.edu/bitstream/handle/2152/84133/lyonsannie_4130420_57688102_LYONS_Thesis_OneDirectionInfection_2020_Redacted.pdf?sequence=2
- Sernoe, J. (2005). “Now We’re on the Top, Top of the Pops”: The Performance of “Non-Mainstream” Music on *Billboard's* Albums Charts, 1981–2001. *Popular Music and Society*, 28(5), 639–662. <https://doi.org/10.1080/03007760500142670>

Serra, C. (2022, January 11). *The Audience of Taylor Swift's 'Red (Taylor's version)'*. Audiense.

Retrieved March 26, 2023, from <https://resources.audiense.com/blog/taylor-swift-red-album-success-what-you-can-learn>

Wells, A. (2001). Nationality, Race, and Gender on the American Pop Charts: What Happened in the '90s? *Popular Music and Society*, 25(1-2), 221–231.

<https://doi.org/10.1080/03007760108591794>