

PROGRAMMING INEQUALITY: GENDER REPRESENTATION ON CANADIAN COUNTRY RADIO (2005-2019)

Jada Watson

School of Music, University of Ottawa

jada.watson@uOttawa.ca

ABSTRACT

In May 2015, a consultant for country radio revealed a decades' long practice of limiting space for songs by female artists. He encouraged program directors to avoid playing songs by women back-to-back and advocated for programming their songs at 13-15% of station playlists. His words sparked debate within the industry and drew attention to growing inequalities on radio and within the genre. The majority of these discussions have centered on US country radio, with limited attention to the growing imbalance on the format in Canada. While country format radio in both countries subscribe to a practice of gender-based programming, Canadian program directors are governed by the federal *Broadcasting Act*, which regulates dissemination of Canadian content. Using metadata extracted from one of the main radio monitoring services – Mediabase, this paper examines gender-related trends on Canadian country format radio between 2005 and 2019. Through data-driven analysis of Mediabase's weekly reports, this paper shows declining representation of songs by women on Canadian country radio and addresses the impact of Canadian content regulations on this process.

1. INTRODUCTION

Gender has long been a central dynamic of programming in the country music industry. In the early days of the genre, male artists were associated with “public work” and commercial success, while women were tucked away in domestic, administrative and musically supporting roles [1-2]. Despite their significant contributions to the genre on the stage and behind the scenes, female artists have historically been limited on radio playlists, tours, television programs, and label rosters [3-5]. Since the 1960s, radio programmers have employed a form of gender-based scheduling as a means to structure and balance playlists; claiming they had fewer songs by women, programmers “spread out” their songs to avoid repetition [6]. This practice formalized in the late 1990s through the work of a radio consultant who developed a system for programming songs by women at 13-15% of playlists [7]. In May 2015, after nearly two decades of promoting his formula, the consultant spoke openly about his method, arguing that the format's majority female fanbase prefers male voices and advocated employing his formula to make ratings [7].

In the 5 years following this interview, research has addressed the growing imbalance on terrestrial radio. Data-driven studies have challenged the industry's growing “anti-female” myth and evaluated the decline in representation on industry charts [8-11]. Using airplay reports to investigate programming practices, recent studies revealed a 66% decline in the number of songs by women within the Top 150 on Mediabase's Yearend reports [12] and an increase in the ratio of spins for songs by men and women from 2 to 1 in 2000 to 10 to 1 by 2018. They also evaluated the distribution of spins for songs by women and found that women were underrepresented across all dayparts in the 24-hour cycle [13]. Taken together, these studies reveal the long-term impact of the gender-based programming on US country format radio.

While gender representation on US country format has been widely discussed, growing inequalities on terrestrial radio in Canada has not received the same attention. A September 2019 report took preliminary steps toward evaluating representation on Canadian country format radio [14], finding similar disparity as in the US but did not fully address the impact on Canadian artists. Given the federal laws regulating Canadian Content, it is important to consider representation through a geo-cultural lens. The present study seeks to extend this framework to consider compliance with federal content regulations and its impact on programming female artists on Canadian country radio.

Adopting methods for Big Data research in the humanities and social sciences [15-18], and influenced by prosopography [19-21], this paper presents an approach for using music industry data to study what airplay and biographic metadata can tell us about socio-cultural and institutional frameworks that govern popular cultures. To do so, I extracted weekly reports of aggregated radio airplay metadata from the Mediabase radio monitoring service's database and built a prosopography of all artists whose songs were played on Canadian country radio between 2005 and 2019. Using RapidMiner, these datasets were then joined to enable data-driven analysis of the community of artists whose songs are programmed on Canadian country radio. This study aims to answer several inter-related questions about representation. First, does the number of songs by male artists exceed those by women on Canadian country radio as it does in the US? Second, how often are songs by women programmed and at what time of day? Finally, how does this programming impact contention on weekly charts? Through each of these questions, the geo-origins of artists are considered in order to facilitate a deeper understanding of how Canadian Content regulations might help or hinder representational issues.



© Jada Watson. Licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0). **Attribution:** Jada Watson. “Programming inequality: Gender representation on Canadian country format radio (2005-2019)”, 21st International Society for Music Information Retrieval Conference, Montréal, Canada, 2020.

2. CONTEXT – CANADIAN RADIO

Broadcast radio in Canada began in the early 1920s (like the USA), with licenses for purchase from the national Department of Marine and Fisheries by groups that operated limited daytime programming [22-23]. As Canadian radio developed through the first half of the century, programming did not reflect the country’s cultural heritage. By the late 1960s, as a renewed sense of nationalism emerged surrounding the country’s centenary celebrations, there was a growing concern of Americanization of Canadian culture in general, and on broadcast radio specifically. Terrestrial radio was dominated by musical imports: by 1968 only 4% to 7% of the songs broadcasted were Canadian, with the remaining songs programmed primarily by musicians from the USA [22]. With little support from radio, Canadian artists struggled to break through the national market – which limited their reach outside of the country [22-23].

Debate came to a head in 1971 with the passage of the *Broadcasting Act*, which outlined Canadian content regulations that would be overseen by the newly formed Canadian Radio-Television Commission (CRTC) [24-25]. These regulations sought to carve out space for Canadian music on AM and (later) FM radio, governing the minimum percentage of songs aired and their time of day – to ensure that Canadian songs are not ghettoized in the overnights. As of 1998, stations are required to play 35% Canadian content [26-27].

In addition to a content quota, the *Broadcasting Act* also outlines criteria for evaluating a song’s “Canadianness”. Known by its acronym **MAPL**, the system includes the following criteria:

1. Music is composed entirely by a Canadian;
2. Artist performing the music or lyrics is Canadian;
3. Performance is (i) recorded wholly in Canada or (ii) performed and broadcast wholly in Canada; and
4. Lyrics are written entirely by a Canadian [28].

A musical work must fulfill two of these conditions to qualify as Canadian and count toward a station’s quota.

3. DATASET

The dataset for this study was curated from the weekly airplay reports generated by Mediabase, a music industry service that monitors airplay in the US and Canada. The dataset contains 319,369 records capturing the weekly activity of the 6,675 unique songs played on Canadian country format radio between 2005 and 2019. The reports include descriptive metadata about the songs played on Canadian country radio (artist, featured artist, title, label and release year) as well as information about their weekly activity (report date, weekly ranking and status, as well as distribution of spins overall and across all 5 dayparts). The 780 weekly reports were downloaded directly from Mediabase’s database, cleaned and merged, and then structured to discover gender- and race-related trends that characterize programming on country format radio. As such, they were augmented with a metadata capturing the biographic details of the artists and ensembles, including genre, ensemble type, gender, race/ethnicity and country of origins.

Country radio programmers use just two labels to code artists in their scheduling software: “male” and “female,” and apply the latter designation to male-female ensembles

– even if the group has a male lead [29]. Moving outside of the industry’s strict binary coding system, this study follows the practice employed in previous studies, using three codes to define artists their biological and sociological status: M for men, W for Women, and M-F for male-female ensembles [11-16]. While this coding system still works with gender binaries, the aggregated radio reports do not include transgender and gender non-binary artists. Thus, while more nuanced categories could be used, the absence of LGBTQ artists in the dataset is suggestive of larger socio-culture issues within programming that are in dire need of attention. This study thus acknowledges their absence and advocates for more inclusive programming.

4. RESULTS

The stations reporting to country format radio play contemporary country music (sometimes referred to as “country-pop”), not what one might call “classics” (i.e. songs by older generations often credited with developing the sound and culture of the genre). The reports include both current singles vying for chart contention and songs in “recurrent” status, which are comprised of songs that have exited the chart but still played regularly on radio that have become part of a station’s back catalogue of standards. Generally, these songs include only those that were released within the preceding five years. Sections 4.1 to 4.3 evaluate representation across all songs played on radio, and Section 4.4 focuses just on the charting activity of current singles.

4.1 Gender representation

Over the course of this 15-year study period, songs by 1,309 artists were played on Canadian country format radio, 59.6% were men, 34.0% were women, 6.4% were male-female ensembles. While this amounts to a 60/40 split for male-only acts and acts that include women (as per radio coding), just 27.9% of all artists are played regularly on country format radio and with enough daily support to make the weekly charts. As such, even fewer female artists are heard regularly on radio. The overwhelming majority of these artists – 94.9% – are white, while 1.4% are Black, 0.8% are Indigenous, 1.1% are multi-racial, and 0.7% identify as having Filipino, Columbian, Hispanic, Latin, and Portuguese heritage. The ethnicity of 1.2% of the artists was unverifiable. This preliminary level of evaluating the identity of the artists reveals gender imbalance, to be sure, but also an overwhelming racial inequality that privileges white artists and excludes Black, Indigenous, Musicians of Colour (hereafter as BIMOC).

Table 1 parses data for the 6,675 songs played on country radio by gender and geo-origins, summarizing the number and percentage of unique songs by Canadians and non-Canadians played on Canadian country format radio between 2005 and 2019. Songs by Canadian artists consistently occupy 46% of the weekly programming. The remaining 54% of the songs are by non-Canadian artists (mostly from the USA). The majority of the songs were by non-Canadian men (37.9%) with those by Canadian men (29.4%) coming in second. Songs by Canadian and non-Canadian women and male-female ensembles occupy approximately the same percentage (16.3%) of songs.

This picture changes when evaluating representation of all songs on the weekly reports, which reveals how many times these songs are included on weekly playlists across the country. As Table 2 summarizes, 75.5% of the songs were by men, 19.3% were by women, and 5.1% were by male-female ensembles. Here, too, non-Canadian men dominate the Canadian country format soundscape, with both Canadian and non-Canadian women occupying just under 10% of weekly radio playlists. These results show that there are not just fewer songs by women (Table 1), but that they are less frequently included on station playlists (Table 2) than those by their male colleagues. The gap thus increases from 59.2% unique songs by men and women to 74.4% when evaluating the rate at which those songs appear on weekly playlists.

	Canadians	Non-Canadians
Men	1,965 (29.4%)	2,528 (37.9%)
Women	942 (14.1%)	892 (13.4%)
Male-female ens.	162 (2.4%)	186 (2.8%)
Total songs	3,069 (45.9%)	3,606 (54.1%)

Table 1. Gender representation of unique songs played on Canadian country format radio

	Canadians	Non-Canadians
Men	105,166 (32.9%)	136,052 (42.6%)
Women	31,486 (9.9%)	30,230 (9.5%)
Male-female ens.	6,747 (2.1%)	9,688 (3.0%)
Total Songs	143,399 (44.9%)	175,970 (55.1%)

Table 2. Gender representation of all songs played on Canadian country format radio

As with the number of unique artists, 96.4% of the unique titles are by white artists. This figure does not change when evaluating the full representation of all songs on the weekly reports. In both perspectives, songs by Black artists make up just 1.3% of the songs played on Canadian country radio, with 1.0% by Indigenous artists, 0.4% by multi-racial artists and all other ethnicities performing the final 0.9%. Few titles by artists who are BIMOC are included on Canadian country radio station playlists.

Figure 1 graphs distribution of songs on the weekly reports by artists’ gender and geographic origins. Songs by Canadian artists are displayed in the line graph with those by non-Canadians in the columns, with light grey representing men, dark grey for women, and black for male-female ensembles. This graph shows that all male artists were programmed at a higher rate every year in this study period. Although the number of songs by men fluctuates, they consistently average 75.6% of the songs played and increase to 82% by 2017, as the percentage of songs by women decline. Canadian male artists consistently occupy 33% of the weekly reports, with songs by non-Canadian men receiving averaging 43% of the weekly playlists.

At the start of this period, women were responsible for an average of 22.7% of the songs played. But between 2009 and 2012, there was a 33% decline in the number of songs by men and women on the weekly airplay reports. Despite the fact that the change appears to have impacted men more in this period, both suffered a 33% loss in songs

on the reports. The gap between men and women remains relatively stable through this period of decline, but steadily widens to a high of 69.2 percentage points by 2017. As the number of songs by women declined between 2009 and 2012, male-female ensembles increased from 5.3% to 9.1%, and then declined back to 2.9% by 2019. This shows more clearly the impact of coding male-female ensembles as “females” in programming, as the ensembles simply replace solo female and all-female ensembles in playlists.

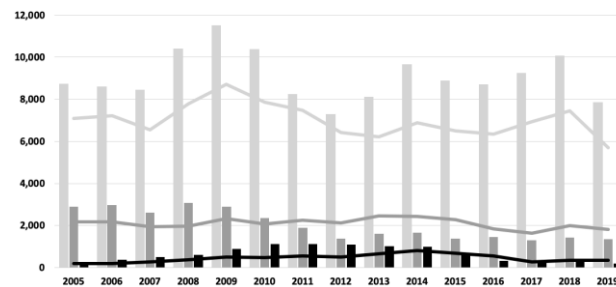


Figure 1. Distribution of songs by Canadians (lines) and non-Canadians (columns)

While male artists maintain their strong placement on Canadian country format playlists, songs by female artists declined from 23.8% in 2005 down to 14.9% by 2017 – a period low for women on Canadian country radio. However, as revealed in Figure 1, this decline had a greater impact on non-Canadian women. Songs by non-Canadian women dropped 13.6% of the weekly reports to a 7.3% average for the last seven years of the study period. Canadian women, though certainly underrepresented, are not impacted to the same degree as non-Canadians, as their songs consistently make up 10% of the weekly reports.

4.2 Distribution of spins

The results above show that an average of 19.3% of the songs played on Canadian country radio are by women, but that picture begins to change when evaluating how often songs are played at the level of accumulated “spins”. Not only does this provide a sense of the space available for songs by women on radio, but it also aids in understanding how often the average listener actually *hears* women’s voices on radio.

Figure 2 maps the distribution of all songs played on radio according to the total spins accumulated weekly, using the same geo-cultural and gender distribution as Figure 1. This figure paints a strikingly different picture of Canadian country radio culture. The number of spins for songs on country radio increased 55% overall between 2005 and 2019, with the majority of spins are granted to songs by non-Canadian men (averaging 50% of the spins), with those by Canadian men coming in second (averaging 30%). Combined, male artists average 80% of the spins over the course of this period. This leaves the remaining 20% for female artists and male-female ensembles. Songs by Canadian women average 7% of the spins on weekly playlists, while airplay for non-Canadian women declines steadily from 14% in 2005 down to 6% by 2019.

Here, too, as with the number of titles included on playlists, songs by artists who are BIMOC are drastically

underrepresented. White artists received a majority of the annual airplay, with more than 90% annually. While this level of racial inequity is disheartening, the data shows that the percentage of spins for Black and Multi-racial artists increased from 0.2% to 8.3% by 2019. These spins are divided between 15 country artists, 10 of which are men who receive 7.8% of the spins. The 4 women of colour played on radio received a combined 0.5% of the annual spins.

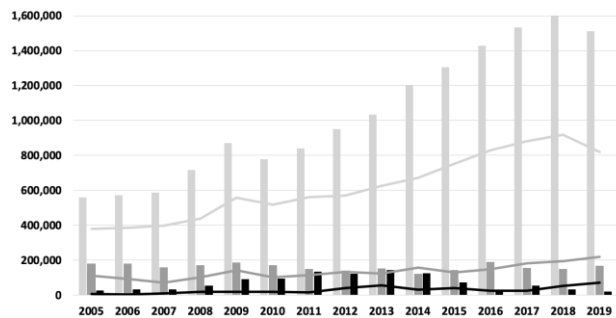


Figure 2. Distribution of spins for songs by Canadians (lines) and non-Canadians (columns)

The picture that emerges in Figure 2 is one of growing inequality and cultural imbalance. While the number of spins for songs by women *increases* between 2005 and 2019, their representation within the full ecosystem *decreases*, dropping 10 percentage points over the course of this period. The decline in overall representation of women can be explained by an increase in the number of country format stations from 21 stations reporting to Mediabase in 2005 to 36 by 2019. As such, songs aren't being played more, they are spread out across more stations.

4.3 Time of Day

It is also important to understand the time of day that these songs are heard by the majority of radio listeners. The 24-hour period at radio is divided into 5 dayparts:

- Overnights (12:00 a.m. to 6:00 a.m.),
- Morning (6:00 a.m. to 10:00 a.m.),
- Midday (10:00 a.m. to 3:00 p.m.),
- Afternoon (3:00 p.m. to 7:00 p.m.), and
- Evening (7:00 p.m. to 12:00 p.m.) [30].

The evening and overnight dayparts register the smallest listening audiences (8% and 4% of the listening audience [31]), but this is when the majority of songs are played with 22% of the spins in the evening and 28% in the overnights. The morning, midday and afternoons periods have the highest percentages of tuned-in listeners (21%, 26% and 21%, respectively [31]); and yet, these three dayparts have the lowest percentage of songs played. Just 13% of the daytime spins occur in the morning, with 20% in the midday and 16% in the afternoon.

Figures 3a and b map the distribution of spins for men, women and male-female ensembles in 2005 and 2019 according to the time of day that songs are played and by country of origins, drilling further into the distribution of spins reported in Figure 2. The columns are presented in temporal order from the overnights (left) to the evening (right) for each category, with shading to represent geo-origins of the artists (non-Canadians in a solid shade, with

Canadians in a patterned shade). While the amount of spins for songs by women has increased (as in Figure 2), there is an overall decline in representation because of the significant increase for songs by men. In 2005, songs by men received 74.4% of the daytime spins, with 23.1% for songs by women and 2.5% for male-female ensembles. By 2019 (Figure 3b), male artists were receiving 83.3% of the total daytime spins. Despite an increase in spins for songs by women over this period, by 2019 songs by women occupy a smaller percentage of the daytime spins.

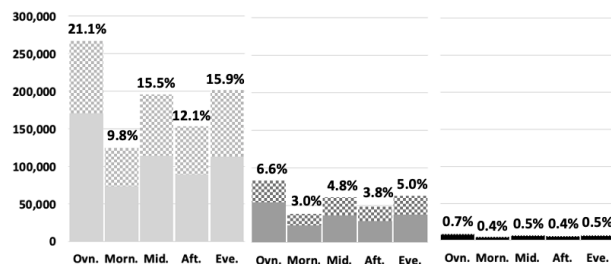


Figure 3a. Distribution of spins by daypart in 2005

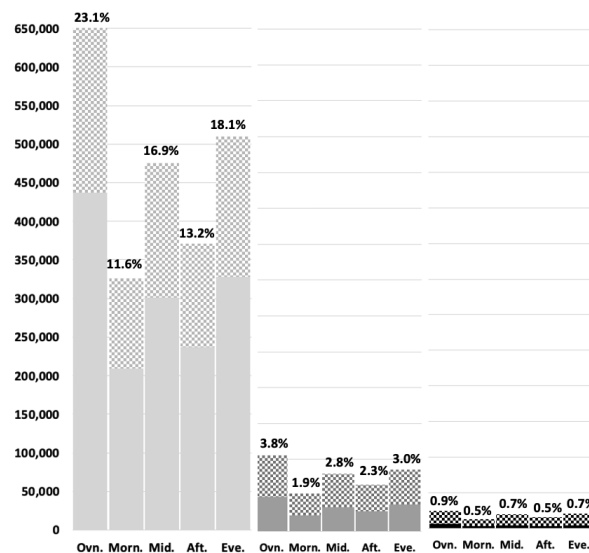


Figure 3b. Distribution of spins by daypart in 2019

What is more disconcerting is the distribution across all five dayparts: songs by women register nearly the same percentage overall as men do in a single daypart for both periods. What this distribution shows is that songs by women are barely heard in daytime hours (6:00 a.m. to 7:00 p.m.), periods with the most listeners. Graphing distribution in this manner also shows clearly how the increase in spins for Canadian women factors on a 24-hour cycle. While they occupy the same space percentage of spins over this period, the number of spins distributed to Canadian women increases, while spins for non-Canadian women decreases.

Taking into account the increase in the number of stations reporting to Mediabase between 2005 and 2019, the number of songs per day can then be mapped to each daypart. As summarized in Tables 2a and 2b, songs by women are not being heard more on Canadian country format radio, they are spread across *more stations*. Thus, this type

of programming marginalizes female artists and ghettoizes their songs to a time of day when the majority of the listening audience is sleeping.

	Canadians			Non-Canadians		
	M	W	MF	M	W	MF
Overnight	25	8	1	45	14	2
Morning	13	4	0	19	6	1
Midday	21	6	0	30	9	1
Afternoon	17	5	0	23	7	1
Evening	23	7	1	30	10	1
	99	29	2	146	47	6
	30%	9%	1%	44%	14%	2%

Table 2a. Number of songs played by non-Canadian and Canadian artists in 2005

	Canadians			Non-Canadians		
	M	W	MF	M	W	MF
Overnight	25	7	2	51	6	1
Morning	14	4	1	25	3	0
Midday	20	5	2	35	4	0
Afternoon	17	4	1	28	3	0
Evening	21	6	1	38	4	1
	96	26	8	177	20	2
	29%	8%	2%	54%	6%	1%

Table 2b. Number of songs played by non-Canadian and Canadian artists in 2019

4.4 Women on the Charts

How often a song is played on radio significantly impacts its chart contention. Songs that enter and climb the weekly airplay charts receive the most weekly spins across Canada’s reporting stations and are most often heard by audiences. Just 32.7% of the unique songs played on country radio appeared on weekly airplay charts, 75% by men, 19% by women and 6% by male-female ensembles. While the charts are certainly not a measure of “quality”, they are an industry standard of measuring a song’s success and are integral to an artist’s development: success on the airplay chart is linked to opportunities within the industry, including tours, festivals and eligibility for industry awards.

Between 2005 and 2019, the average amount of spins needed for a song to break into the 50-position chart increased 50% from 100 to 150 weekly spins. As this base number increased, the number of charting songs by women decreased. Figure 4 maps the distribution of these songs on the 50-position weekly airplay chart, showing the dominance of non-Canadian men (46.7%), followed by Canadian men (28%). Representation of female artists declines from 25.2% to 12.2% in 2018 before increasing to 17.7% (with 10.2% for Canadians and 7.5% for non-Canadians).

Given the racial inequity noted at the level of the full weekly reports, it is not surprising that the 50-position chart is dominated by white artists. Though significantly underrepresented, there have been increasingly more songs by artists who are BIMOC – from 1.0% in 2005 to 9.2% by 2019. These songs, however, are performed by just 14 unique artists, 10 of which are men and who are responsible for 80% of the 83 charting songs by BIMOC.

Representation worsens when drilling into the top positions on the weekly airplay charts. The bar for entering the

Top 10 positions on the weekly chart increased 59%, from 390 to 950 weekly spins by 2019. This, coupled with declining number of songs by women, resulted in a gradual disappearance of their songs from the top positions. As visible in Figure 5, the same general geo-cultural pattern is maintained: non-Canadian men dominate the chart and Canadian men come in second. Unlike above, however, Canadian women are significantly underrepresented in the Top 10, with an average of just 2.4% of the songs against 9.8% by non-Canadian women. By 2019, songs by both groups make up 5% of the annual Top 10.

Representation in the top positions of the chart is particularly dire when evaluating racial equity: just 3.5% of the Top 10 songs are by artists who are BIMOC. Despite the noted absence overall, there percentage of Top 10 songs by artists who are BIMOC increases from 0% in 2005 to 8.6% by 2019. Just two women of colour – Ojibwe artist Crystal Shawanda and Columbian-Canadian Kira Isabella – were responsible for five Top 10 songs between 2008 and 2014, none of which reached the top of the chart. Women of colour are thus absent from the top 10 positions of the chart, significantly limiting their exposure and shutting them out of opportunities within the industry.

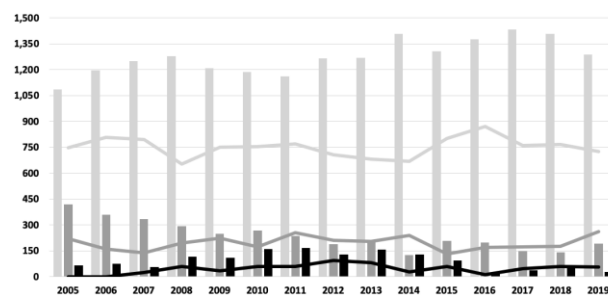


Figure 4. Distribution of songs in the Top 50 chart by Canadians (lines) and Non-Canadians (columns)

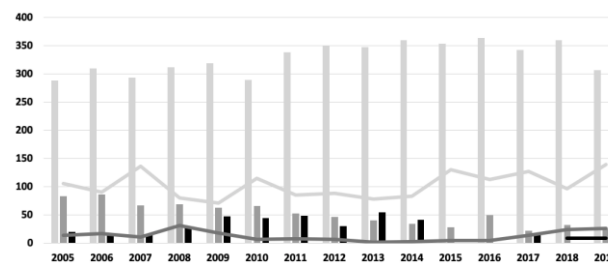


Figure 5. Distribution of Top 10 songs in the chart by Canadians (lines) and non-Canadians (columns)

The picture is most bleak at the top of the chart. Reaching the #1 position on an airplay chart requires a significant amount of weekly spins. As with other benchmark positions, the number of spins required for a song to reach #1 more than doubled between 2005 and 2019, increasing from 550 to 1,370 weekly spins.

Figure 6 reveals that the majority of the #1 songs in 2005 were by men (66%), increasing to a high of 96% in 2015 before declining to 90% by 2019 – and almost exclusively for non-Canadian artists. There is a period high of 36% for songs by women in the #1 spot in 2006, but this is followed by a steady decline to no songs in 2011 and an

average of 3% in the final years. Canadian artists are nearly absent from the top of the chart in the first 7 years of the period. With the exception of one #1 song for Terri Clark in 2008, Canadians were completely shut out of the top position of the chart until 2012, when Canadian male artists begin to achieve #1 songs – averaging three a year. Given the trends discussed thus far, Canadian women (and male-female ensembles) are the most underrepresented group, with just five #1 songs over 15 years. As the space available for women on station playlists declines, that accolade becomes increasingly unattainable for female artists.

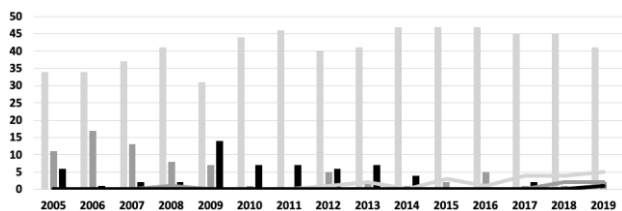


Figure 6. Distribution of #1 songs on the weekly chart by Canadians (lines) and non-Canadians (columns)

5. DISCUSSION

The findings of this study illustrate that gender and racial inequality plagues Canadian country format radio. Not only do white, male artists have more songs on Canadian country radio overall and annually, but their songs are also played more often throughout the 24-hour cycle. The findings here echo the inequality identified in studies of US country format radio [12-13]. In Canada, as in the US, the gap between songs by men and women increases from 67.9% in 2005 to 76.5% by 2019 – a disparity that holds true (and indeed worsens) at the level of weekly airplay, time of day programming, and on the weekly charts. Racial inequity, though not surprising for this genre, is particularly problematic: while there has been an increase in representation of artists who are BIMOC over this period, their voices are nearly absent from radio. Only 14 artists who are BIMOC had enough airplay to have charting songs, just 4 of whom are women. Thus, over the course of this 15-year period, not only have songs by women started to disappear from the Canadian country charts and from the #1 position on the weekly reports, but women of colour are excluded from participation.

The Canadian content regulations offer another layer to this discussion. While this study revealed that 44% of the songs played on radio are performed by Canadians, those songs receive just 38.2% of the annual spins, with 30.3% songs by men, and just 6.6% by women and 1.3% by male-female ensembles. Thus, even though stations are fulfilling their content requirements, they average just above the quota and privilege non-Canadian artists. Indeed, non-Canadian men dominate at all levels of programming: they have the most songs, the most spins, the highest percentage of daytime programming and the most charting songs. Canadian men are second to non-Canadian men at all levels, with the exception of #1 songs – where non-Canadian women rank second overall in the number of chart-topping songs. While Canadian women are underrepresented, to be sure, the trend at all levels of analysis (with the exception

of the #1 position) is one of decline for non-Canadian women against an increase in songs, spins and daytime activity for Canadian women. This is not simply a result of the dwindling number of songs by women in the broader country music market but is suggestive of a trend in which program directors are creating more opportunities for the Canadian female artists – even if marginal.

Drilling into these weekly reports in this manner reveals the dominance and success of non-Canadians. Canadian artists receive enough spins to fulfill federal regulations on programming but are not favored enough within daily programming to have greater successes within the top positions of the weekly charts. Their near absence from the top of the chart – especially in the case of Canadian women – reveals a limit on success for the country’s most prominent country artists on Canadian radio. While this of course makes business sense when considering that Nashville, Tennessee has been the centre of the industry since the genre formed, this is a missed cultural opportunity to further develop the industry north of the 49th parallel.

6. CONCLUSION AND FUTURE WORK

Music industry data offers a unique opportunity to evaluate the changing dynamics of a genre’s culture and gain a better understanding of the composition of its cultural ecosystem. What emerges in the results of this study is a feedback loop that has slowly eliminated opportunities (in the form of daily airplay) for female artists, and gradually erases them from the industry’s ecosystem. Women of colour are most impacted by this practice and excluded from participation. Program directors use this same airplay data to make programming decisions for their stations and then use the absence of songs by women on weekly reports and popularity charts to justify and maintain a gender-based programming practice. This is what data scientists refer to as “digital redlining” [32-33], a system by which data indirectly or directly uses criteria like gender, sexuality, and ethnicity to make assessments and recommendations.

Beyond the impact that these practices have on the livelihood of female artists, gender-based programming is also culturally damaging. Current practices, which focus heavily on repetition of songs by white, male voices, creates increased familiarity with those male artists and results over time in a more homogenized sound [34]. In this context, female voices – especially of artists who are BIMOC, have become increasingly *unfamiliar* to country radio audiences. This type of programming completely alters the public’s perception of who is contributing to country music culture and contributes to a growing crisis of inequality.

Radio airplay is only one part of the story regarding gender inequality. The lack of radio airplay for songs by women deters labels and publishers from investing in female artists, and songwriters are discouraged from writing songs for them [35]. As such, next steps in this project will evaluate representation across label and publishing rosters to better understand how they operate within this system. In this regard, gender-identity and sexuality must be incorporated into future studies to investigate how these practices have been structured to establish and maintain the white, male, heteronormative discourse that pervades country music’s narrative and culture.

7. ACKNOWLEDGEMENTS

This research is funded by a grant from the Faculty of Arts at the University of Ottawa. The data is under license with Mediabase and cannot be made publicly available. The author would like to thank Eugénie Tessier for her help with the initial phase of extracting weekly reports from Mediabase's database. She would also like to thank the anonymous reviewers for their invaluable feedback and suggestions for future directions of this project.

8. REFERENCES

- [1] M.A. Bufwack and R.K. Oermann, *Finding Her Voice: Women in Country Music, 1800-2000*. Nashville, Tennessee: The Country Music Foundation Press & Vanderbilt University Press, 2004.
- [2] K.M. McCusker, "Gendered stages: Country music, authenticity, and the performance of gender," in *The Oxford Handbook to Country Music*, T. D. Stimeling, Ed. New York, New York: Oxford University Press, 2017, pp. 355-74.
- [3] K. Heidemann, "Remarkable women and ordinary gals: Performance of identity in songs by Loretta Lynn and Dolly Parton," in *Country Boys and Redneck Women: New Essays in Gender and Country Music*, D. Pecknold and K.M. McCusker, Eds. Jackson, Mississippi: University of Mississippi Press, 2016, pp. 166-88.
- [4] K.M. McCusker, *Lonesome Cowgirls and Honky Tonk Angels: The Women of Barn Dance Radio*. Champaign, Illinois: University of Illinois Press, 2008.
- [5] E. Weisbard, "Country radio: The dialectic of genre and format," in *The Oxford Handbook to Country Music*, T. D. Stimeling, Ed. New York, New York: Oxford University Press, 2017, pp. 229-48.
- [6] B. Keel, "Sexist 'tomato barb' launches food fight on Music Row," *The Tennessean*, 25 May 2015, <https://www.tennessean.com/story/entertainment/music/2015/05/27/sexist-tomato-barb-launches-food-fight-music-row/28036657>, retrieved April 11, 2020.
- [7] R. Penuell, Interview with Keith Hill on "Music scheduling," *Country Aircheck*, vol. 499, 2015, pp. 8.
- [8] D. Ghosh, "The meaningless Florida-Georgia Line Billboard country songs record: Who really has the biggest country hit?" *Mjs Big Blog*, 2 August 2013, <https://www.mjsbigblog.com/the-meaningless-florida-georgia-line-billboard-hot-country-songs-record-who-really-has-the-biggest-country-hit.htm>, retrieved April 11, 2020.
- [9] D. Ghosh, "Country radio & the anti-female myth: a data-based look," *Mjs Big Blog*, 29 May 2015, <https://www.mjsbigblog.com/country-radio-the-anti-female-female-myth.htm>, retrieved April 11, 2020.
- [10] Trigger, "Billboard changes country chart rules, boosts 'crossover' songs," *Saving Country Music*, 11 October 2012, <https://www.savingcountrymusic.com/billboard-changes-country-chart-rules-boosts-crossover-songs/>, retrieved April 11, 2020.
- [11] J. Watson, "Gender on the *Billboard* Hot Country Songs chart, 1996-2016," vol. 42, no. 5, pp. 538-660, 2018.
- [12] J. Watson, "Gender representation on country format radio: A study of published reports from 2000-2018," *SongData Reports*, 26 April 2019, <https://songdata.ca/wp-content/uploads/2019/04/SongData-Watson-Country-Airplay-Study-FullReport-April2019.pdf>, retrieved April 11, 2020. Prepared in consultation with WOMAN Nashville.
- [13] J. Watson, "Gender representation on country format radio: A study of spins across dayparts (2002-2018)," *SongData Reports*, 6 December 2019. <https://songdata.ca/wp-content/uploads/2019/12/SongData-Watson-Country-Airplay-TODStudy-December2019.pdf>, retrieved April 11, 2020. Prepared in consultation with WOMAN Nashville.
- [14] J. Watson, "Gender representation on Canadian country format radio: A study of published reports from 2005-2018," *SongData Reports*, 6 September 2020, <https://songdata.ca/wp-content/uploads/2019/09/SongData-Watson-Country-Airplay-Canada-FullReport-September2019.pdf>, retrieved April 11, 2020.
- [15] M. Lafrance, L. Worcester, and L. Burns, "Gender and the *Billboard* Top 40 Charts between 1997 and 2007," *Popular Music & Society*, vol. 34, no. 5, pp. 557-70, 2011.
- [16] M. Lafrance, C. Scheibling, L. Burns, and J. Durr, "Race, gender, and the *Billboard* Top 40 Charts between 1997 and 2007," *Popular Music & Society*, vol. 41, no. 5, pp. 522-38, 2018.
- [17] F. Moretti, *Graphs, Maps and Trees: Abstract Models for Literary History*. New York, New York: Verso, 2005.
- [18] S. Rose, S. Tuppen, and L. Drosopoulou, "Writing a Big Data history of music," *Early Music*, vol. XLIII, no. 4, 649-660, 2014.
- [19] A. Cameron, *Fifty Years of Prosopography: The Later Roman Empire, Byzantium and Beyond*. New York, New York: Oxford University Press, 2003.
- [20] C. Crompton and M. Schwartz, *Lesbian and gay liberation in Canada prosopography*, (n.d.), <https://prosopography.lgic.ca/about>, retrieved April 11, 2020.
- [21] K. Verboven, M. Carlier, and J. Dumolyn, "A short manual of the art of prosopography," in *Prosopography Approaches and Applications: A Handbook*,

- K. Keats-Rohan, Ed. New York, New York: Oxford University Press, pp. 35-70, 2007.
- [22] P. Audley, *Canada's Cultural Industries: Broadcasting, Publishing, Records and Film*. Toronto, Ontario: J. Lorimer in association with the Canadian Institute for Economic Policy, 1983.
- [23] E. Spalding, "Turning point: The origins of Canadian content requirement for commercial radio," *Journal of Canadian Studies*, vol. 50, no. 3, pp. 669-690, 2016.
- [24] Canada, Broadcasting Act (S.C. 1991, c. 11), *Gov of Canada*, last amended 11 July 2019, <https://laws-lois.justice.gc.ca/eng/acts/B-9.01/>, retrieved April 11, 2020.
- [25] Canada, "Chapter XVIII: Radio broadcasting," *Royal Commission on National Development in the Arts, Letters and Sciences: Report*, Ottawa, King's Printer, 1951, <http://www.collectionscanada.gc.ca/2/5/h5-440-e.html>, retrieved April 11, 2020.
- [26] Canadian Radio-Television and Telecommunications Commission, "Content made by Canadians," *Gov. of Canada*, last modified 12 March 2020, <https://crtc.gc.ca/eng/cancon.htm>, retrieved April 11, 2020.
- [27] Unknown, "The history of Canadian broadcast regulation," *History of Canadian broadcasting, Canadian communications foundation*, 2020, <https://www.broadcasting-history.ca/history-canadian-broadcast-reulation>, retrieved April 11, 2020.
- [28] Canadian Radio-Television and Telecommunications Commission, "The MAPL system – defining a Canadian song," *Gov. of Canada*, last modified 10 August 2009, https://crtc.gc.ca/eng/info_sht/r1.htm, retrieved April 11, 2020.
- [29] L. Gifford, "Interview with Keith Hill," *Radio Stuff Podcast*, 2 June, <https://omny.fm/shows/radio-stuff-podcast/keith-hill-country-radio-consultant>, retrieved July 31, 2020.
- [30] Mediabase, Dayparts, *Mediabase* (website). <http://www.mediabase.com/mmrweb/mmrhelp/Daypart.htm>, retrieved April 11, 2020.
- [31] P. Bouvard, "Perception vs. reality: Drive time isn't the only time for AM/FM Radio," *WestwoodOne*, 19 February 2019, <https://www.westwoodone.com/2019/02/19/perception-vs-reality-drive-time-isnt-the-only-time-for-am-fm-radio/>, retrieved April 11, 2020.
- [32] C. D'Ignazio and L.F. Klein, *Data Feminism*. Cambridge, Massachusetts: MIT Press, 2020.
- [33] S.U. Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism*. New York, New York: New York University Press, 2018.
- [34] P.A. Russell, "Effects of repetition on familiarity and likability of popular music recordings," *Psychology of Music*, vol. 15, pp. 187-97, 1987.
- [35] L. Liebig, "Carrie Underwood says, 'songwriters aren't writing for women,' but she understands why," *The Boot*, February 24, 2020, <https://theboot.com/carrie-underwood-supporting-women-crs-2020/>, retrieved April 11, 2020.