



Audio Engineering Society

Convention Paper 10497

Presented at the 150th Convention
2021 May 25-28, Online

This Convention paper was selected based on a submitted abstract and 750-word precis that have been peer reviewed by at least two qualified anonymous reviewers. The complete manuscript was not peer reviewed. This convention paper has been reproduced from the author's advance manuscript without editing, corrections, or consideration by the Review Board. The AES takes no responsibility for the contents. This paper is available in the AES E-Library, <http://www.aes.org/e-lib>. All rights reserved. Reproduction of this paper, or any portion thereof, is not permitted without direct permission from the Journal of the Audio Engineering Society.

Women in Music Industry Roles: A Twenty-Year Analysis

Chandler Bridges¹, Haley Strong¹, Aaron Overton², and Justin Berish¹

¹ *Jacobs School of Music, Indiana University, Bloomington, IN*

² *The Los Angeles Film School, 6363 Sunset Blvd, Los Angeles, CA*

Correspondence should be addressed to Author (chandler.bridges@gmail.com)

ABSTRACT

This research analyzed the gender distribution of the songwriters, producers, and performers of chart-topping music for the 21st century, over a twenty-year period. Some studies have suggested that women are vastly under-represented, however, this amount of data has not been cited nor analyzed previously. Selected from all 21st century songs in Billboard magazine's Hot 100 end-of-year charts (N=210), this research analyzed gender distribution of these participants (N=1624). While the results are indicative of previously reported trends showing women holding a small percentage of creative roles in popular charting music, the data indicate an upward momentum of women holding credited positions on top albums. The discussion includes further results and educational implications as well as reifying how these data are rapidly changing.

1 Introduction

Music production and the recording arts as a whole has been and still is a largely male-dominated field. This has, historically, been due to several factors, including the industry's focus on an apprenticeship model, as well as fostering a general "male-dominant" atmosphere in recording studios and production environments. Over the past several years, it is important to note that a very strong community of women audio engineers have begun to appear who have played substantial roles in the development and production of some of today's most popular music. Indeed, some of the most sought-after sound engineers for both recording and live performances are now women. While these developments in the field are no doubt positive, segregation of gender in the workplace still exists in many occupational fields in the United States (Burrell & Zucca, 2004) and has been an area of much study and focus of public attention since the sixties (McGlowan-Fellows, 2003), with audio

engineering and production being no exception to this phenomenon. In pursuit of answering this question, this study exists to document the industry as it finds

itself today, with a study of the recent past, and an eye aimed toward the future.

While men and women have both garnered name and fame as musical artists, there seems to be an imbalance in the gender ratio of these performers in the industry. For an example, we can look to previous research about careers in music, which refer to songwriters and producers only as men and does not address gender issues at all (Reisman, 1977). In his textbook, "Modern Recording Techniques," David Huber (Huber, 2012) includes only a brief paragraph about women in the industry and, as one might suppose from context, uses this space to point out the extreme lack of women in the workplace. The website for Women's Audio Mission reports that women are "critically under-represented," with less than 5% of those involved in the music business being

female. (Women's Audio Mission). while gender studies have been conducted for both the workplace and educational settings, very little data exists regarding the culture of the recording studio, the processes therein, and the personnel involved.

To provide context with what little data does exist, the British Broadcasting Corporation conducted a study that found that 91% of production jobs are held by men in the United States and Europe, two of the world's largest hubs for music, recording, and production (BBC, 2013). This was not always the case. BBC, as the company is known today, was actually among the first to train female audio engineers during World War II and has done so perpetually afterwards. Despite this initial welcome to women within the industry, the progress appears to have somewhat receded industry wide. Abramo (2009) studied how gender affects music composition and rehearsal among rock bands in a secondary school setting. This study began to examine the differences in styles and varieties of leadership in the musical setting that members of each gender tended to offer. Hren (2012) further explored the impact of perceived gender roles on career decisions of women in science-related fields. While being a music producer does not necessarily involve any more technology than other fields, more often than not a producer will work in a techno-creative capacity to complete a project and the Hren (2012) study discusses some of these trends and barriers.

The question remains as to why so many women face this rather difficult entry into the field. To address this directly, we must look to educational and cultural roots. There are presently several suspected impediments; many argue that women, as previously mentioned, face a male saturated and male dominated job market that operates itself in the manner of an "old boys' club." Trina Shoemaker, a popular and greatly admired engineer, states that the doors are often shut before women can even enter, describing the market as having a "guild mentality," that effectively insulates men and excludes women by nature of the existing hierarchy and structure of the industry itself.

Likewise, due to sexist and misogynistic assumptions regarding women, many feel that the behavior of men—namely male musicians—would be too rowdy or uncomfortable for 'the average

woman'. "A producer has to turn into the person that fits in with the band: If they're a bunch of guys and they're young and they're funny and they tell rude jokes, you have to be a woman who isn't shocked by that and can, as a matter of fact, crush them all with three words" (BBC, 2013).

Another barrier to entry of note is that of the "apprenticeship" model, a tradition that the field of audio engineering has relied on to train prospective new engineers and producers. Music production and the recording arts have been known as a "male dominated field" that relied on this apprenticeship model, with on-the-job training (Reisman, 1977). In this model, a student learns an advanced trade from a master of that craft, generally during their college years or immediately following them. Souther's study (1992) demonstrated that this model often leads to the exclusion of female peers from the necessary training to enter the workforce.

Yet one further consideration must be the demonstrated lack of gender expansive mentors and role models instilled through generations of exclusionary industry and educational practices. When young women choose their majors in college, if they happen to see that no one else in their field or major seems to be female, this alone can often provide a deterrent to their own desire to continue in that major. This simple lack of representation itself can provide a further hindrance to young women interested in the field. And since, historically, trade-based fields have been seen as the domain of men and men alone, these elements all likely coalesced to manifest a culture that serves to make women feel unsafe to enter or remain in the music industry.

To date, no study has investigated the gender makeup of women actively involved in the production side of the music business. Researchers may be able to ascertain how and if this gender-fulfilling phenomenon of a male dominated leadership position takes place after the true demographics of those involved in music production are accurately measured. Therefore, the primary purpose of this research was to ascertain demographic information about the role of women in the music industry as artist, songwriter, and producer.

Research Questions:

- Regarding the top ten charted compositions as rated by the Billboard Hot 100 for the last 21 years:
- *How many women are involved in leading a group or are featured as the artist?*
- *How many women are involved in songwriting?*
- *How many women are involved in producing?*

2 Method

A gender profile of persons involved with the top-ten charting songs from 2000-2020 ($N = 210$) was completed in the spring of 2021. Songs included in this study were identified using the Internet listings from the Hot 100 end-of-year charts from the Billboard Magazine website (www.billboard.com). The top ten highest charting songs for each year were analyzed in three areas: songwriter(s), producer(s), and artist(s).

The top charting songs were entered into an Excel spreadsheet along with the participants involved in each category of analysis. The names of all credited songwriters, producers, and artists were entered into individual columns.

Multiple web sources were utilized to determine and verify the contributing personnel as well as their gender including: www.allmusic.com, www.billboard.com, www.grammy.com, personal websites, and web search images. Following these sections, the gender distributions were tallied, and percentages were calculated (see Tables 1 - 4).

3 Results

From the 210 songs surveyed, 1726 participants were involved in the role of songwriter, producer, or artist. Summary results of all participants is shown in Table 1 where 865 songwriters, 401 producers, and 460 artists were represented. The majority of those involved were male (85.75%); however, the percentage of women involved (14.25%) is much higher than many organizations, including Women's Audio Mission, had previously stated.

In regard to songwriters, there were 14.22% female ($n = 114$). When investigated by each year, female involvement in the production and recording of these top-charting songs is as follows: songwriters

14.22% ($n = 114$), producers 4.24% ($n = 14$), and artists 23.04% ($n = 100$). (See Tables 2-4).

4 Discussion

From the turn of the century, this study shows males outnumbering females by a large margin, as was initially speculated. This result also mirrors the situation reported by many women's advocacy groups. It also follows the gender segregation trends within technical fields, which are largely perceived as male occupations (Reisman, 1977). In the role of artist, where fewer technological skills in production and recording are expected or utilized, no collegiate or trade-based education is required, and one might reasonably expect more equal female representation. Females comprised 23.04% of represented contributors. However, according to Billboard, the songs that sat at the top of the charts for over 65% of the time were songs recorded by women (Billboard, 2014). This should serve to demonstrate that women's stake generally in the industry as artists has grown substantially, even if their status remains uneven. In the field of music production, males performed the role of producer 95.76% of the time, with literally 0 of the top 10 songs since 2012 featuring a female producer. This is an alarming development, and a disparity that likely needs a study entirely on its own. The question must be posed: why does there seem to be very little demand for female producers? Russian American recording artist Regina Spektor admitted to BBC that she "never thought" to look for the names of female producers on the record label's shortlist. This seemingly small detail could attest to a generally accepted culture that perpetuates a patriarchal system of majority within the industry as a whole.

But even this, while demonstrating a large gender disparity, can be viewed as progress. Due to the apprenticeship educational models that have been in place for almost a century that have dominated the music production field, one would first expect the number of participating females to be roughly nil. However, there has been slight progress, with the rise of technical schools, community colleges and university programs teaching audio production and the recording arts, a further increase in the number of women involved in the industry should likely occur,

simply by nature of increased access to these programs for women.

One common argument that must be addressed as we analyze this data is whether women are broadly interested in this field of study to an equivalent extent to men. Professor Susan Rogers—an Audio Engineer with artists like Prince on her resume—asserts that “the bottom line is, women aren’t interested. Right now, I currently teach engineering and production; and I also teach psychoacoustics and music cognition. In the psychology topics, the students are half women and half men. But in production and engineering, maybe one out of every 10 students is a young woman.” (BBC, 2013). Upon further research, it was discovered that David Ferris, a professor at Belmont University (another institution that boasts one of the nation’s finest institutes for educating sound engineers and industry professionals) found similar results in his classes during the fall of 2013: “In surveillance of my sophomore class, I found that all but one of thirty students were male. The class further lacked any real diversity in regard to race or ethnicity, a plight the engineering industry impedingly faces” (Ferris, 2014). To this point, it is crucial to remember that many women feel unsafe pursuing production work due to a lack of sufficient industry and educational role models and cultural issues in the studio. It is difficult, then, to accurately measure whether women, when on an even playing field, would be equally interested in these fields as men. It is of considerable importance for women in the industry to pass their love for this craft to the next generation of women and to begin the establishment of gender equality in the Audio Engineering profession as only 9% of Audio Engineers are women (Cox, 2011). As research and professors in the realm of Audio Engineering have stated, the industry is plagued by a patriarchal system that is male dominated, as well as lacking interest among women and young girls in the field, possibly due to inadequate representation in the first place. Gross reports that there are very few organizations or advocacy groups that are campaigning for the increase of women in the field as well as a lack of mentorship programs in Secondary Education (Gross, 2014). Sabolchick Pettinato, as well as audio engineering veteran Karrie Keyes (known for

working with bands including Pearl Jam) introduced SoundGirls in 2013, an organization that “provide(s) a place where women in live sound can connect, network, and support each other while also inspiring and empowering the next generation of women in audio” (Soundgirls.org, 2015). While there are a myriad of male dominated guilds, unions, and foundations for Audio Engineers, women in the field lacked a real voice, which was essential to the establishment of programs and curricula that would foster mentorship opportunities (Ernst, 2014).

As previous research has shown, there is little evidence to indicate females would perform any differently than males in leadership positions, (Wentworth & Anderson, 1984), so there is, at this point, no business-based incentive for educational programs or the music business more broadly to exclude women from learning the trade. It is through a combination of approaches that we will truly begin to see the equalization of genders within the larger industry. One major step that would likely need to be taken is the apprenticeship model would need to be adjusted to account for new women with a desire for entering the field. Another likely aid to the furtherance of women in the industry would be that of a cultural shift in the recording studio. Making the studio a place that all people feel safe and welcome to work is crucial to women entering the music industry workforce. Finally, women must be hired at the recording studio level and the educational hierarchical level, where women of influence can be both a driving force for equality in the industry and key examples to those women with an interest in learning the craft that other women in the industry already possess and have found success.

5 Limitations

There were several limitations within this study. First, although every attempt was made to carefully determine the gender of the songwriters, producers and artists involved and calculate percentages of involvement, it is entirely possible that a single person could be counted multiple times, both on the same song in multiple positions and across multiple songs. When duplicates appeared, these duplicates were left by design, as removal of these data would inaccurately skew the results of this study. Second, only 210 songs spanning the last twenty-one years

were used for this study. This resulted in a sample that did not encompass any participants before 2000. Third, this study did not include audio engineers, who are involved in the production and are also under-represented by women in the industry. This omission, while intentional due to the difficulty in collecting this data, may be able to be included in future studies as the standards for reporting song meta-data is improved. Fourth, this study was conducted during a period of societal change in which an increasing percentage of people do not identify with a single gender. The implication of such societal change follows that some participants studied may eventually change gender or refuse to identify with one, thus the results of the study are subject to change. Fifth, and possibly most importantly, the focus of this study was on the best-performing songs of the past 20 years. This leaves a much wider field of musicians, producers, artists, and songwriters that were not accounted for in this study due to the breadth of information that might entail, and the simple focus of our study being on the top songs from each year rather than a measure of the entire industry at every level of musical and financial success. It is important not to apply the results of these findings too broadly and instead to utilize these findings as a basis for broader future research.

6 Conclusion

The purpose of this study was to determine the gender distribution of songwriters, producers, and artists involved in the creative side of the music business using, as our basis, the most popular songs of each of the past 20 years. Additionally, this study sought to establish a methodology for data collection as well as a baseline of data for future studies. However, data within the current study indicate that the majority of those involved are still males and more work is needed by those in our profession to help create a balance in the field, as was referenced in our earlier discussion. As the apprentice model fades away and music educators recruit and expand their programs to include more women in the production and recording side of the industry, the gender distribution will change. Therefore, it seems the numbers revealed in this study are a basis for understanding the gender distributions as they stand for the top songs, artists, producers, and writers in pop

music currently, which can be a motivating factor to instantiate a change in the industry. Further research, therefore, must be done to document and analyze the progress made in balancing the distribution of gender in the music industry. Notably, further research should also include data on individuals who do not identify with a single gender as well as including data from specific genres in order to provide a demographic for each.

References

- [1] Billboard Magazine (2014) "25 Years of Music: Billboard 1988-2013" Billboard Research Publications, Los Angeles.
- [2] Cox, P. (2011) "Inspiring The Next Generation of (Female) Audio Engineers" University of California, Los Angeles Journal of Production, Sound, and Technology Vol. LVI, Issue I, Los Angeles.
- [3] Ernst, T. (2013) "Increasing the Presence of Women in Audio and Music Production" Poplar Journal of Audiology and Audio Technology, Vol. LI, Issue, IX, Cambridge.
- [4] Ferris, D. (2014) Belmont University Journal Of Social Engagement in Audio Technology, Vol. XXXI, Issue VII, Nashville.
- [5] Gross, B. (2012) "Women and the Technical Realm: Renewing Interest" Frost Institute of Audiology Research Quarterly, Vol XXIX, Issue III, Houston.
- [6] Joyeaux, M. (2003) "The Perpetual Glass Ceiling: Women and Sound" Postrik-Vine Publications, 1st Ed., Nashville.
- [7] Juarez, B. (2012) "The State of Audio Engineering: A Social Analysis" Kent State University Journal of Audio Engineering and Technology, Vol. X, Issue II, Cleveland.
- [8] Sanders, W. (2009) "Establishing a Presence of Women in Engineering" Insitute of Women in the Workforce, Vol XXX, Issue I, New York.
- [9] Savage, M. "Where are Female Record Producers So Rare?" BBC News, March 23, 2013. (www.bbc.com/news/entertainment-arts-19284508) Retrieved March 12, 2015.
- [10] "Billboard 200 Albums - 1985 Year End Charts". billboard.biz. 1984-12-31. Archived

- from the original on 2012-12-31. Retrieved March 12, 2015.
- [11] Abramo, J. M. (2009). Popular music and gender in the classroom. (Order No. 3348564, Teachers College, Columbia University). *ProQuest Dissertations and Theses*, , 403. Retrieved from <http://search.proquest.com/docview/304869240?accountid=4840>. (304869240).
- [12] AllMusic. (n.d.) *AllMusic*. Retrieved April 20, 2014, from AllMusic: <http://www.allmusic.com>.
- [13] Branscome, E. E. (2010). *Music career opportunities and career compatibility: Interviews with university music faculty members and professional musicians*. (Order No. 3417736, University of North Texas). ProQuest Dissertations and Theses, , 273. Retrieved from <http://search.proquest.com/docview/74648222?accountid=4840>. (74648222).
- [14] Burrell, J. H., & Zucca, L.J. (2004). The gender equity gap in top corporate executive positions. *American Journal of Business*, 19(1), 55-62.
- [15] Gaston-Bird. (2017). 31 Women in Audio: Leya Soraide. 31 Women in Audio [Online]. Available: <http://mixmessiahproductions.blogspot.com/2017/03/31-women-in-audio-leya-soraide.html> [Accessed March 9, 2017].
- [16] Gaston-Bird, Leslie (2019). *Women in Audio*. Routledge Press. New York.
- [17] Google. (n.d.) *Google*. Retrieved April 20, 2014, from Google: <http://www.google.com>.
- [18] Grimes, S. E. (2007). Women in the studios of men: Gender, architectural practice, and the careers of sophia hayden bennett and marion mahony griffin, 1870--1960. (Order No. 3324165, Saint Louis University). ProQuest Dissertations and Theses, , 361. Retrieved from <http://search.proquest.com/docview/304817697?accountid=4840>. (304817697).
- [19] Hren, S. F. (2012). A multicase study of the impact of perceived gender roles on the career decisions of women in science-related careers. (Order No. 3548146, Utah State University). *ProQuest Dissertations and Theses*, , 294. Retrieved from <http://search.proquest.com/docview/1282133233?accountid=4840>. (1282133233).
- [20] Huber, M.D. (2012). *Modern Recording Handbook*. Focus Press.
- [21] Kale, S. (2006). Beyond gender? women in the cultural economy of electronic music. (Order No. MR16429, Carleton University (Canada)). *ProQuest Dissertations and Theses*, , 88-88 p. Retrieved from <http://search.proquest.com/docview/305354459?accountid=4840>. (305354459).
- [22] Lemus, J. (2013). I'm just a girl. what's my destiny?: Characteristics of women in the organizational culture of the music industry. (Order No. 1543706, California State University, Los Angeles). *ProQuest Dissertations and Theses*, , 97. Retrieved from <http://search.proquest.com/docview/1431983360?accountid=4840>. (1431983360).
- [23] Lingle, S. K. (2007). Occupational sex typing: Shinar revisited. (Order No. 1447013, Southern Illinois University at Carbondale). ProQuest Dissertations and Theses, , 51. Retrieved from <http://search.proquest.com/docview/304815509?accountid=4840>. (304815509).
- [24] McGlowan-Fellows, B. (2003). The differential perception of the ability to be hired and promoted in the workplace based on race and gender. (Order No. 3114608, Union Institute and University). *ProQuest Dissertations and Theses*, , 323-323 p. Retrieved from <http://search.proquest.com/docview/30521778?accountid=4840>. (305217778).
- [25] Reisman, j. (1977). Careers in Music. *Music Educators Journal* 63(7), 65-67.
- [26] Souther, E. L. (1992). *Gender difference in professional developmental relationships within male and female-dominated professions*. (Order No. 9312903, Texas Woman's University). *ProQuest Dissertations and Theses*, , 169-169 p. Retrieved from

- http://search.proquest.com/docview/304009359?accountid=4840. (304009359).
- [27] Stark, I. (2008). Savvy women readers and gender strategies in the workplace. (Order No. 3317414, University of California, Santa Cruz). *ProQuest Dissertations and Theses*, , 186-n/a. Retrieved from <http://search.proquest.com/docview/304663977?accountid=4840>. (304663977).
- [28] Tolley, D. L. (2008). A music industry program for today's colleges and universities. (Order No. 3300149, The Ohio State University). *ProQuest Dissertations and Theses*, , 166. Retrieved from <http://search.proquest.com/docview/304483498?accountid=4840>. (304483498).
- [29] Toyokawa, T. (2000). Adolescents' interests in activities and sex-typing of occupational preferences and choices. (Order No. 9998443, The Pennsylvania State University). *ProQuest Dissertations and Theses*, , 243-243 p. Retrieved from <http://search.proquest.com/docview/304615451?accountid=4840>. (304615451).
- [30] Wentworth, D.K., & Anderson, L.R. (1984). Emergent leadership as a function of sex and task type. *Sex Roles*. 11, 513-524.
- [31] Women's Audio Mission. (n.d.) *About Us*. Retrieved April 20, 2014, from Women's Audio Mission: <http://www.womensaudiomission.org/about>.

Table 1 Gender distribution for Songwriters, Producers, & Artists from Billboard Hot 100 End of Year Charts 2000-2020

	MALE		FEMALE		Total
	Σ	%	Σ	%	
2000	58	79	15	21	73
2001	59	76	19	24	78
2002	73	90	8	10	81
2003	50	86	8	14	58
2004	77	91	8	9	85
2005	56	73	21	27	77
2006	53	79	14	21	67
2007	55	81	13	19	68
2008	66	90	7	10	73
2009	55	80	14	20	69
2010	65	79	17	21	82
2011	80	86	13	14	93
2012	70	83	14	17	84
2013	69	93	5	7	74
2014	71	85	13	15	84
2015	79	96	3	4	82
2016	65	83	13	17	78
2017	96	94	6	6	102
2018	105	88	15	13	120
2019	105	90	12	10	117
2020	73	90	8	10	81
Totals	1480	86	246	14	1726

Table 2 Gender distribution for Songwriters from Billboard Hot 100 End of Year Charts 2000-2020

	MALE		FEMALE		Total
	Σ	%	Σ	%	
2000	22	73	8	27	30
2001	28	82	6	18	34
2002	36	90	4	10	40
2003	23	88	3	12	26
2004	33	89	4	11	37
2005	29	81	7	19	36
2006	27	77	8	23	35
2007	28	85	5	15	33
2008	36	95	2	5	38
2009	27	82	6	18	33
2010	29	78	8	22	37
2011	37	86	6	14	43
2012	34	85	6	15	40
2013	32	91	3	9	35
2014	34	83	7	17	41
2015	41	95	2	5	43
2016	32	80	8	20	40
2017	48	91	5	9	53
2018	61	86	10	14	71
2019	66	88	9	12	75
2020	39	87	6	13	45
Totals	742	86	123	14	865

Table 3 Gender distribution for Producers from Billboard Hot 100 End of Year Charts 2000-2020

	MALE		FEMALE		Total
	Σ	%	Σ	%	
2000	16	94	1	6	17
2001	15	79	4	21	19
2002	17	100	0	0	17
2003	11	92	1	8	12
2004	12	92	1	8	13
2005	19	95	1	5	20
2006	14	88	2	13	16
2007	15	94	1	6	16
2008	15	94	1	6	16
2009	14	88	2	13	16
2010	21	88	3	13	24
2011	23	100	0	0	23
2012	17	100	0	0	17
2013	17	100	0	0	17
2014	22	100	0	0	22
2015	18	100	0	0	18
2016	20	100	0	0	20
2017	22	100	0	0	22
2018	29	100	0	0	29
2019	23	100	0	0	23
2020	24	100	0	0	24
Totals	384	96	17	4	401

Table 4 Gender distribution for Artists from Billboard Hot 100 End of Year Charts 2000-2020

	MALE		FEMALE		Total
	Σ	%	Σ	%	
2000	20	77	6	23	26
2001	16	64	9	36	25
2002	20	83	4	17	24
2003	16	80	4	20	20
2004	32	91	3	9	35
2005	8	38	13	62	21
2006	12	75	4	25	16
2007	12	63	7	37	19
2008	15	79	4	21	19
2009	14	70	6	30	20
2010	15	71	6	29	21
2011	20	74	7	26	27
2012	19	70	8	30	27
2013	20	91	2	9	22
2014	15	71	6	29	21
2015	20	95	1	5	21
2016	13	72	5	28	18
2017	26	96	1	4	27
2018	15	75	5	25	20
2019	16	84	3	16	19
2020	10	83	2	17	12
Totals	354	77	106	23	460