

Gender Gap in Electronic Music (EM) Scene

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Research Question

How big is the gender gap in the EM scene?

And its evolution over the past decades ?

More specifically--

- 1. Representation Gap: ratio between the number of male and female artists**
- 2. Productivity Gap: ratio between number of releases by male and female artists**
- 3. Opportunity Gap: ratio between number of gigs and festivals participation by male and female artists**
- 4. Earning Gap: ratio between the average release prices by male and female artists**


Electronic Music Genre

We have looked into these particular EM genres-




Data Source

Primary Data sources- *MusicBrainz*, *Songkick*, *Juno* and *Discogs*

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Artist ▼

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 **Ed Sheeran** (UK singer-songwriter)
~ Person

[Overview](#) [Releases](#) [Recordings](#) [Works](#) [Events](#) [Relationships](#)

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Legal name: Edward Christopher Sheeran

Wikipedia

Edward Christopher Sheeran, (; born 17 February 1991) is an English singer, songwriter, guitarist, record producer, and actor. He attended the Academy of Contemporary Music in Guildford as an undergraduate from the age of 18 in 2009. In early 2011, Sheeran independently released the extended play, *No. 5 Collaborations Project*. After signing with Asylum Records, his debut album, + (pronounced "plus"), was released in September 2011. It topped the UK and Australian charts, reached number five in the US, and has since been certified seven-times platinum in the UK. The album contains the single "The A Team", which earned him the Ivor Novello Award for Best Song Musically and Lyrically. In 2012, Sheeran won the Brit Awards for Best British Male Solo Artist and British Breakthrough Act. "The A Team" was nominated for Song of the Year at the 2013 Grammy Awards, where he performed the song with Elton John.

Artist information

Sort name: Sheeran, Ed
Type: Person
Gender: Male
Born: 1991-02-17 (28 years ago)
Born in: [Hebden Bridge, West Yorkshire, England, !\[\]\(1f875e8ff0db454eb302861a56ff194f_img.jpg\) United Kingdom](#)
Area: [United Kingdom](#)
IPI code: 00600664284
ISNI code: 0000 0003 6443 4564

Rating
★★★★★ (see all ratings)

Genres
[pop](#), [dance-pop](#), [folk](#), [folk pop](#)

Other tags
[gradually watermelon](#)

Data Crawling and Data Cleansing

- Crawler developed using Python libraries (BeautifulSoup)
- Extracted some specific data (i.e. ID, Name, Gender, Genre, Type, Birthday) for each artist from *MusicBrainz* (149650)
- Omitted group/band artists (106509)
- Filtered using a list of genres suitable only for electronic music style (3877)
- Collected data related gig history and release informations from *Songkick* (3021534)
- Redundant entries and missing values were dropped

Data Crawling and Data Cleansing

Separate datasets are merged into a single CSV file. The merged dataset contains--

- **Artist Names**
- **Countries/Origin**
- **Number of Live Gigs**
- **Concert Years**
- **Gender**
- **Birthdate**
- **Album Release Years**
- **Number of Albums**
- **Average Album Selling Prices**
- **Genre**

Final Merged Dataset

The Final Dataset contains 466 artist's data.

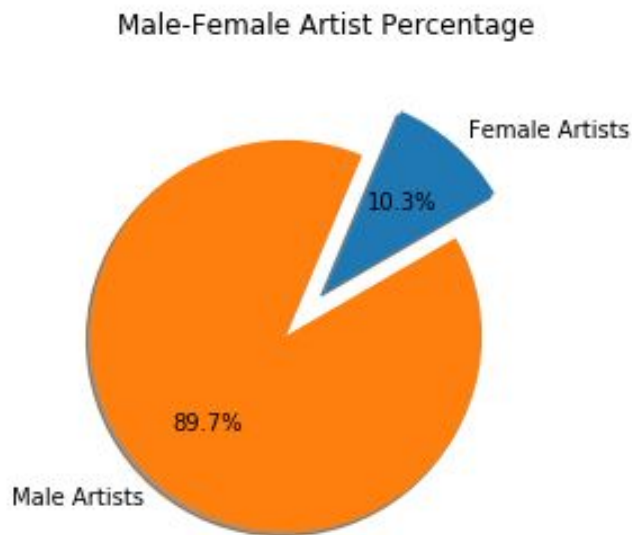
	B	C	D	E	F	G	H	I	J	K
1	Name	Countries	GigCount	ConcertYears	Gender	Birthday	Release_Years	AlbumCount	AvgPrice	
2	oneohtrix point n	uk,us,croatia,us,u	262	2010,2016,2015,	Male	25/7/1982	2018,2018,2018,	13	5.84	
3	james ferraro	us,us,croatia,cro	78	2010,2011,2018,	Male	7/11/1986	2013,2012,2013,	5	13.104	
4	scuba	uk,croatia,mexico	404	2016,2014,2016,	Male	3/10/1950	2018,2018,2017,	69	6.273913043478265	
5	grimes	us,us,us,us,us,us	295	2016,2016,2016,	Female	17/3/1988	2014,2012,2012,	9	19.52	
6	ryan hemsworth	us,us,us,uk,germ	178	2016,2014,2013,	Male	15/03/1965	2018,2013	2	3.64	
7	floating points	us,spain,croatia,i	333	2016,2018,2015,	Male	21/07/1972	2019,2019,2019,	16	3.965	
8	julia holter	us,croatia,spain,r	315	2016,2015,2016,	Female	18/12/1984	2019,2018,2018,	18	5.257777777777778	
9	julianna barwick	us,croatia,croatia	346	2016,2011,2015,	Female	04/02/1985	2011,2016,2014,	4	7.539999999999999	
10	mykki blanco	us,croatia,croatia	317	2016,2014,2013,	Male	2/4/1986	2018,2018,2013,	13	5.6	

Data Analysis

Representation Gap: ratio between number of Male and Female artists

Male Artist: 89.7%

Female Artist: 10.3%

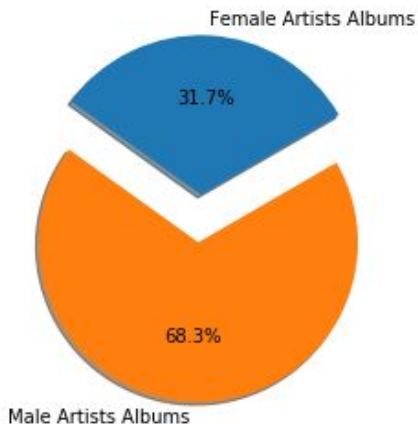


Data Analysis

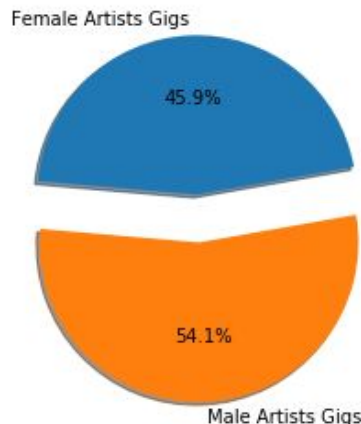
Productivity Gap: Ratio of Album releases between Male and Female artists

Opportunity Gap: Ratio of number of Gigs/Concerts between Male and Female artists

Male-Female Album Release Percentage



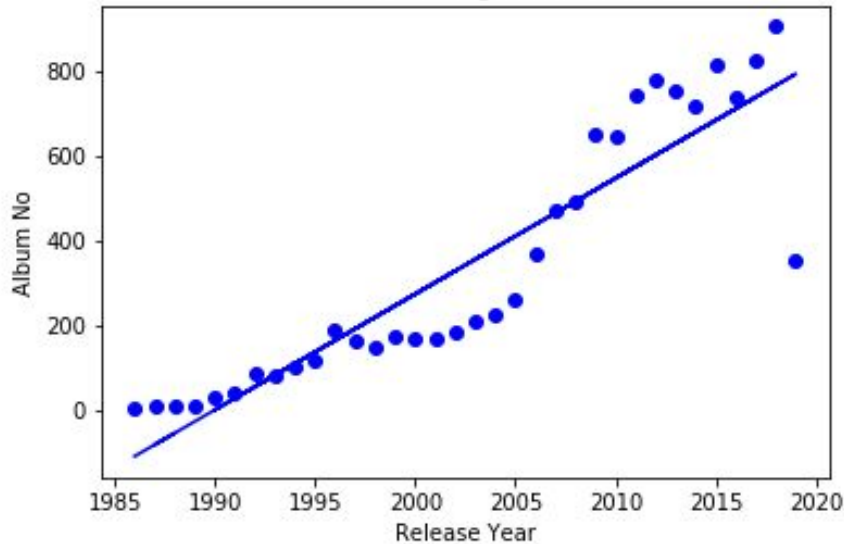
Male-Female Live Gigs/Concerts Percentage



Data Analysis

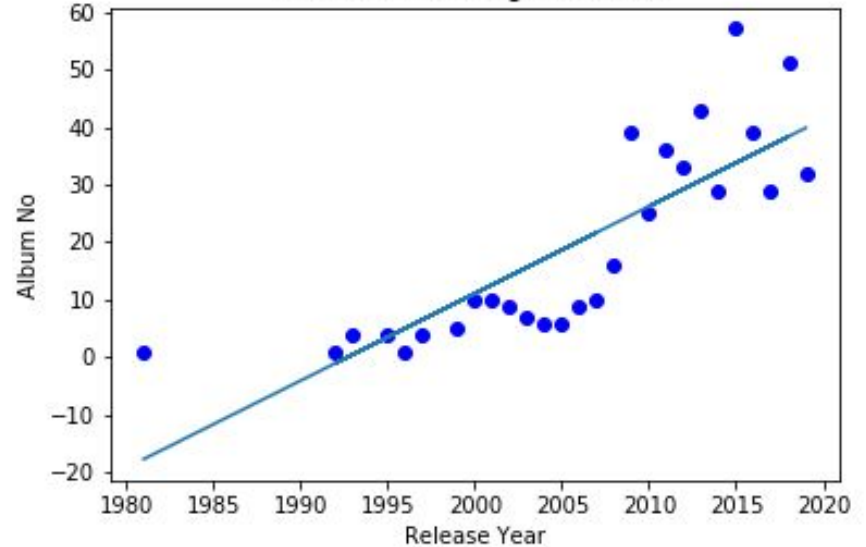
Productivity: Album release scenario of Male and Female artists over the past years

Male Album Regression Line



Pearson Correlation Coefficient: 0.9

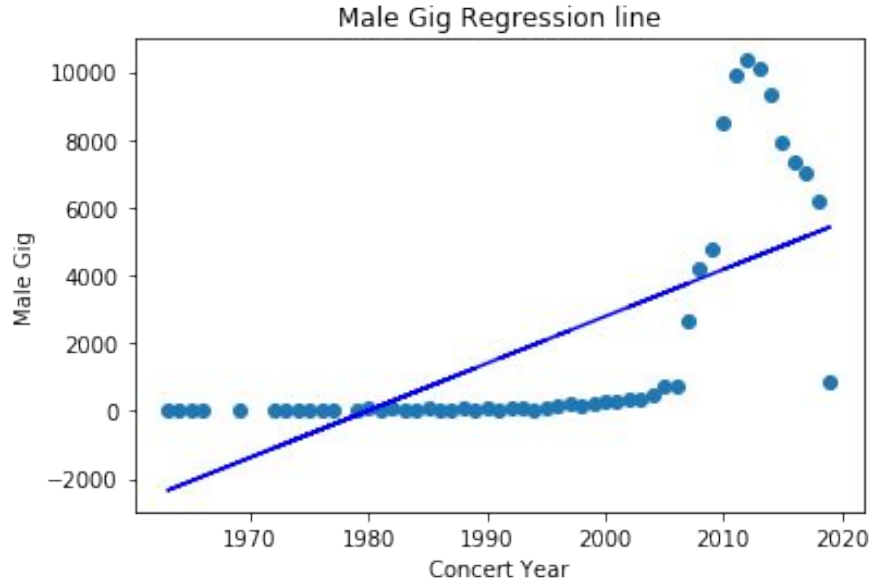
Female Album Regression line



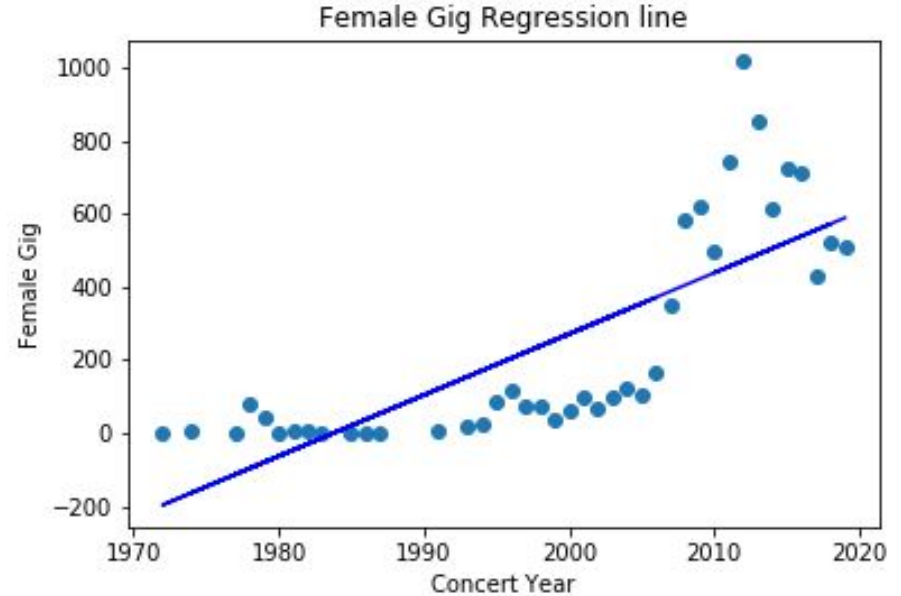
Pearson Correlation Coefficient: 0.825

Data Analysis

Opportunity: Gigs/Concerts participation of Male and Female artists over the past years



Pearson Correlation Coefficient: 0.677



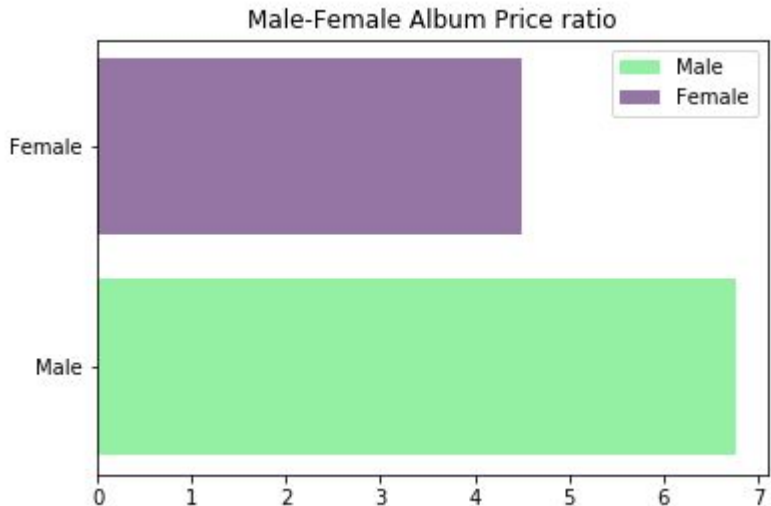
Pearson Correlation Coefficient: 0.7797

Data Analysis

Album Price Gap: Difference between the average release prices by Male and Female artists

**Average release price for Male Artist:
€6.76**

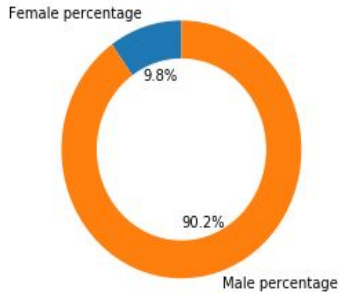
**Average release price for Female Artist:
€4.50**



Data Analysis

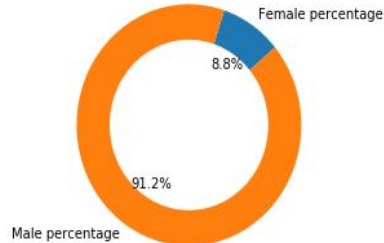
Ratio of Male - Female artists in top six countries

Male and Female Percentage in Australia



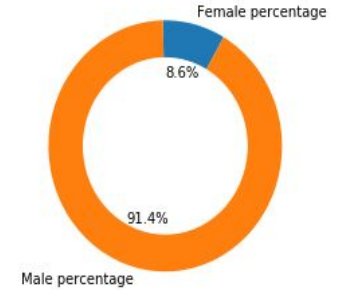
Australia

Male and Female Percentage in France



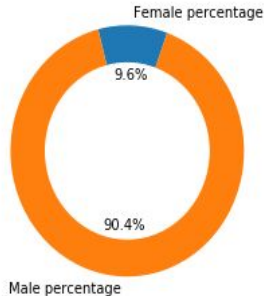
France

Male and Female Percentage in USA



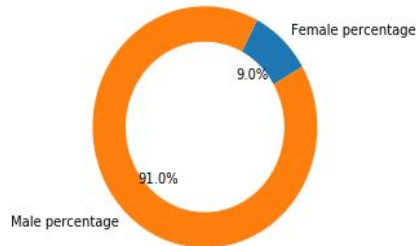
USA

Male and Female Percentage in Germany



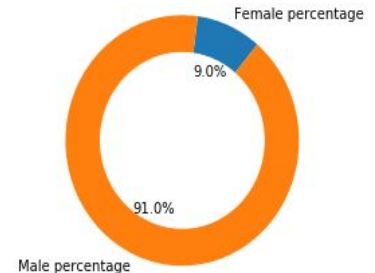
Germany

Male and Female Percentage in Croatia



Croatia

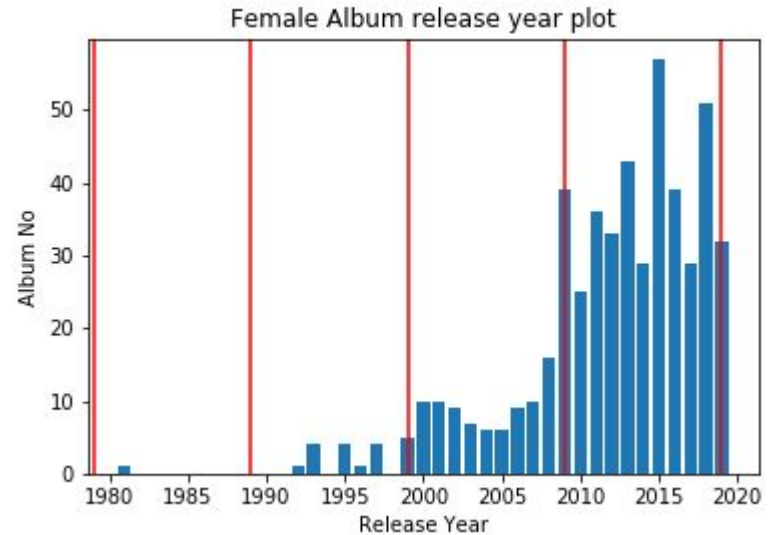
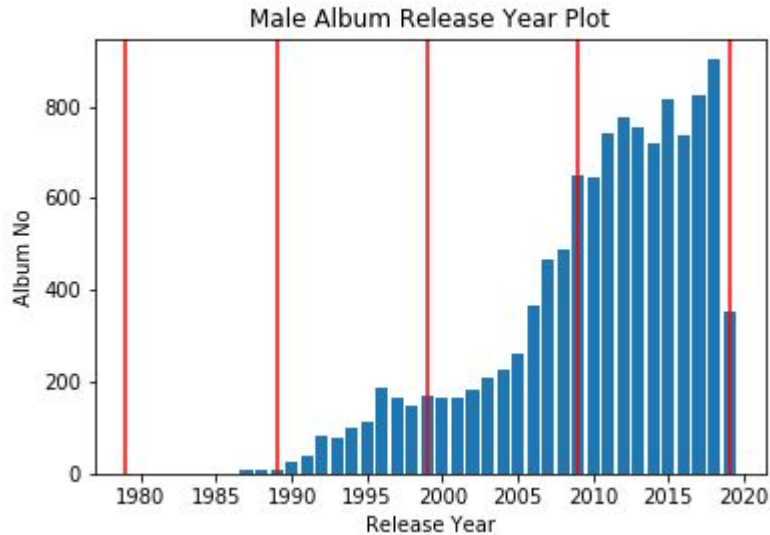
Male and Female Percentage in UK



UK

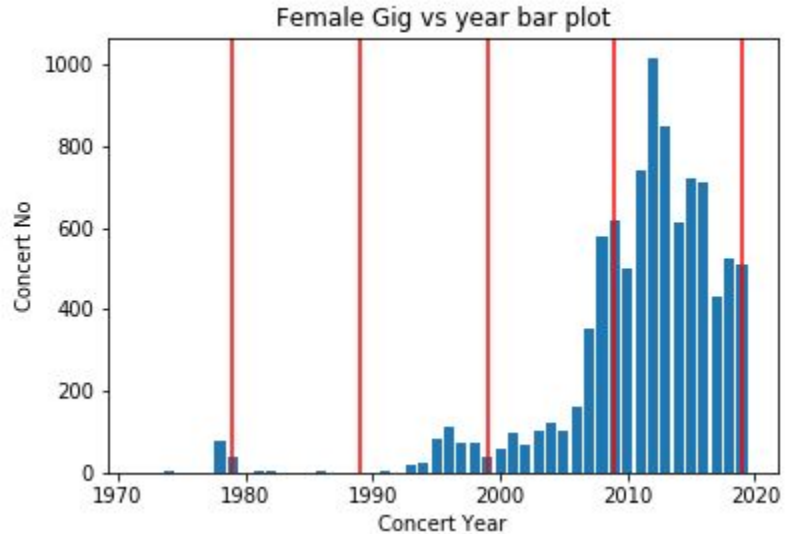
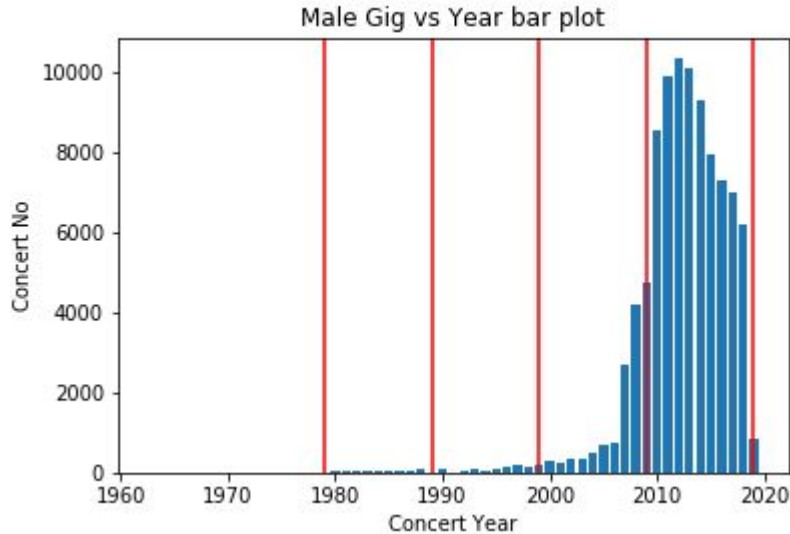
Data Analysis

- Evolution of EM scene in the past years- Album Releases



Data Analysis

- Evolution of EM scene in the past years- Gigs/Concerts



Overview

After visualizing the dataset, it is pretty evident that there exists a significant level of discrimination between male and female artists in Electronic Music genre.

Limitations

- Obviously one can not consider every sub-genres that falls under Electronic Music. Lots of new genres are coming everyday.
- The tag 'electronic' alone holds 2945 artists information. However, these informations are not always complete i.e artist gender, type, region were missing.
- Discogs has around half a million data entries. But we could not merge this data with the small MusicBrainz data

Tag "electronic"

Overview Artists Release Groups Releases Recordings

2945 artists found

Previous 1 2 3 4 5 ... 30 Next

13 - Aphex Twin
42 - Boards of Canada



Applied Filters

Electronic x

Genre

Rock	46,268
Pop	42,129
Funk / Soul	18,779
Hip Hop	18,251
Jazz	9,025

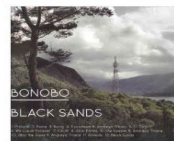
All ▾

Style

All Release 3,145,288 Master Artist Labels

Exploring Electronic

1 – 50 of 471,578 < Prev Next >



Black Sands



Los Angeles

Limitations (...)

- Merging *MusicBrainz* and *Songkick* datasets resulted in some discrepancies
- Some artist listed in songkick were not listed in musicbrainz and vice versa
- Thus many artists were omitted from our consideration
- Earning from album sale data is not complete, as album prices are changing regularly
- Earning data from streaming services is not available

Related Works

1. Women in Audio: Contributions and Challenges in Music Technology and Production-- Marlene Mathew, Jennifer Grossman, and Areti Andreopoulou-
https://www.researchgate.net/publication/312116630_Women_in_Audio_Contributions_and_Challenges_in_Music_Technology_and_Production
2. Who gets to play the electronic music- Carolina Lindén-
<http://www.diva-portal.org/smash/get/diva2:1092021/FULLTEXT01.pdf>
3. Gender differences in computer-and instrumental-based musical composition- Shibazaki, K. and Marshall, N.A.-
https://www.researchgate.net/publication/271946349_Gender_differences_in_computer-_and_instrumental-based_musical_composition
4. Gender Differences in the Global Music Industry: Evidence from MusicBrainz and The Echo Nest- Yixue Wang, Emőke-Ágnes Horvát--
<https://www.aaai.org/ojs/index.php/ICWSM/article/view/3249>

Work Distribution

Data Crawling	Basitur Rahman Chowdhury
Data Preprocessing (Cleansing & Merging)	Muhammad Momotazul Islam, Md Tariqul Islam
Data Visualization	Muhammad Momotazul Islam
Data Analysis and Inference	Muhammad Momotazul Islam, Md Tariqul Islam
Binder, Git	Md Tariqul Islam
Project Coordination	All Members

**Thank You
For Your Attention**

Questions?