

Telling a Story

Gender dynamics in the film industry

Meihan Luo (r0959998)
Yiyao Jin (r0962152)

Story Overview

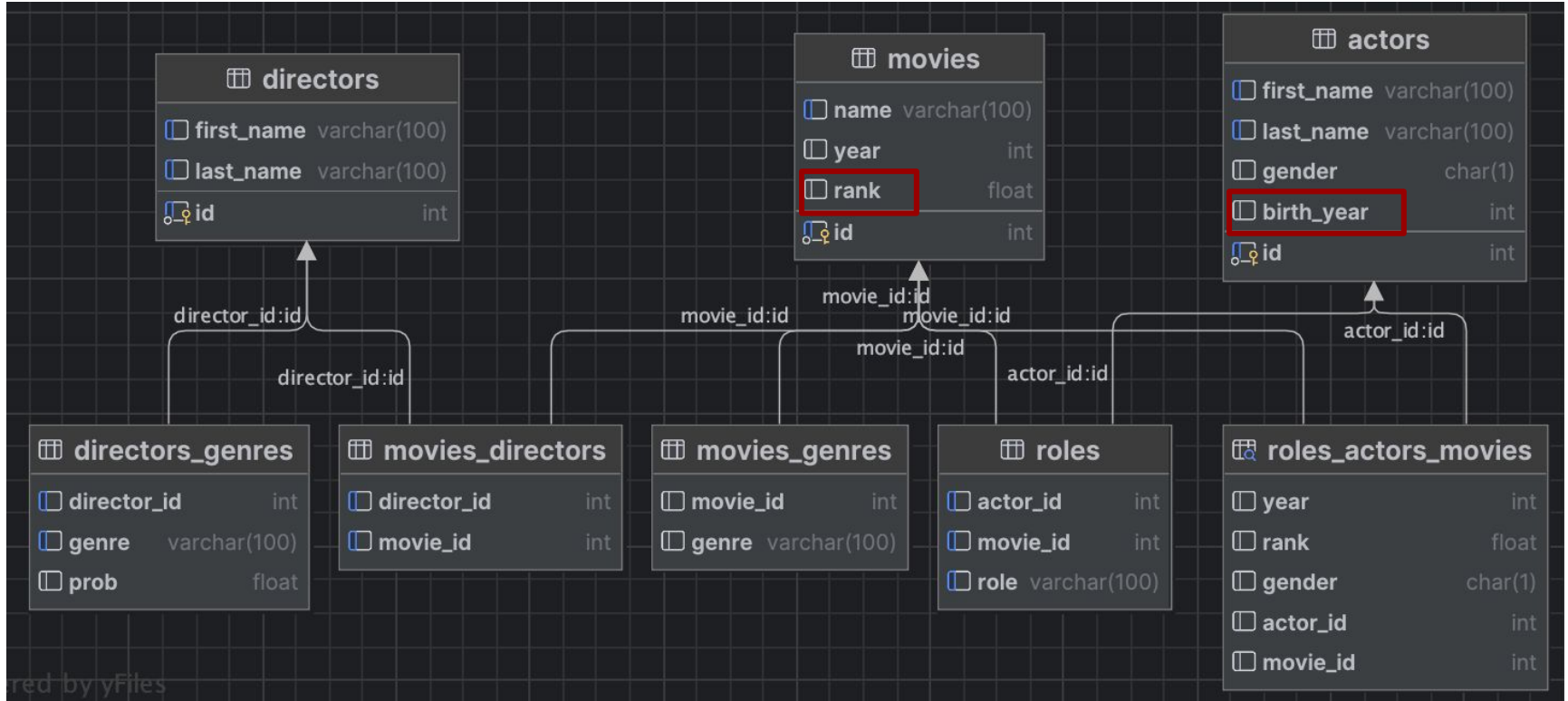
The story explores gender dynamics in the film industry, examining how the representation and roles of different genders have evolved, their prevalence across genres, and the relationship between gender diversity and film success, and whether female actors have gained more prominence in the film industry in recent years.

We first look at how the gender ratio has changed and differed over the years, and then explore the possible reasons for the imbalance, including career length, film types, film ratings, gender ratios in the same series, and director factors.

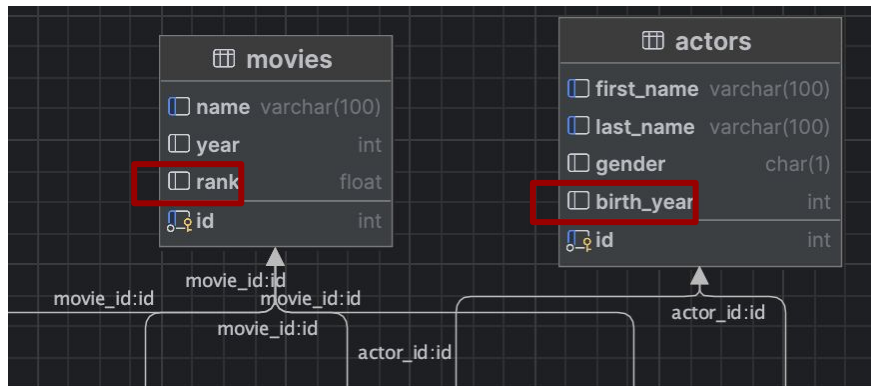
Start with a question

How has the gender gap
been represented in the film
industry over time?

Gather Data



Gather Data



IMDb data files available for download

Documentation for these data files can be found on <http://www.imdb.com/interfaces/>

[name.basics.tsv.gz](#)

[title.akas.tsv.gz](#)

[title.basics.tsv.gz](#)

[title.crew.tsv.gz](#)

[title.episode.tsv.gz](#)

[title.principals.tsv.gz](#)

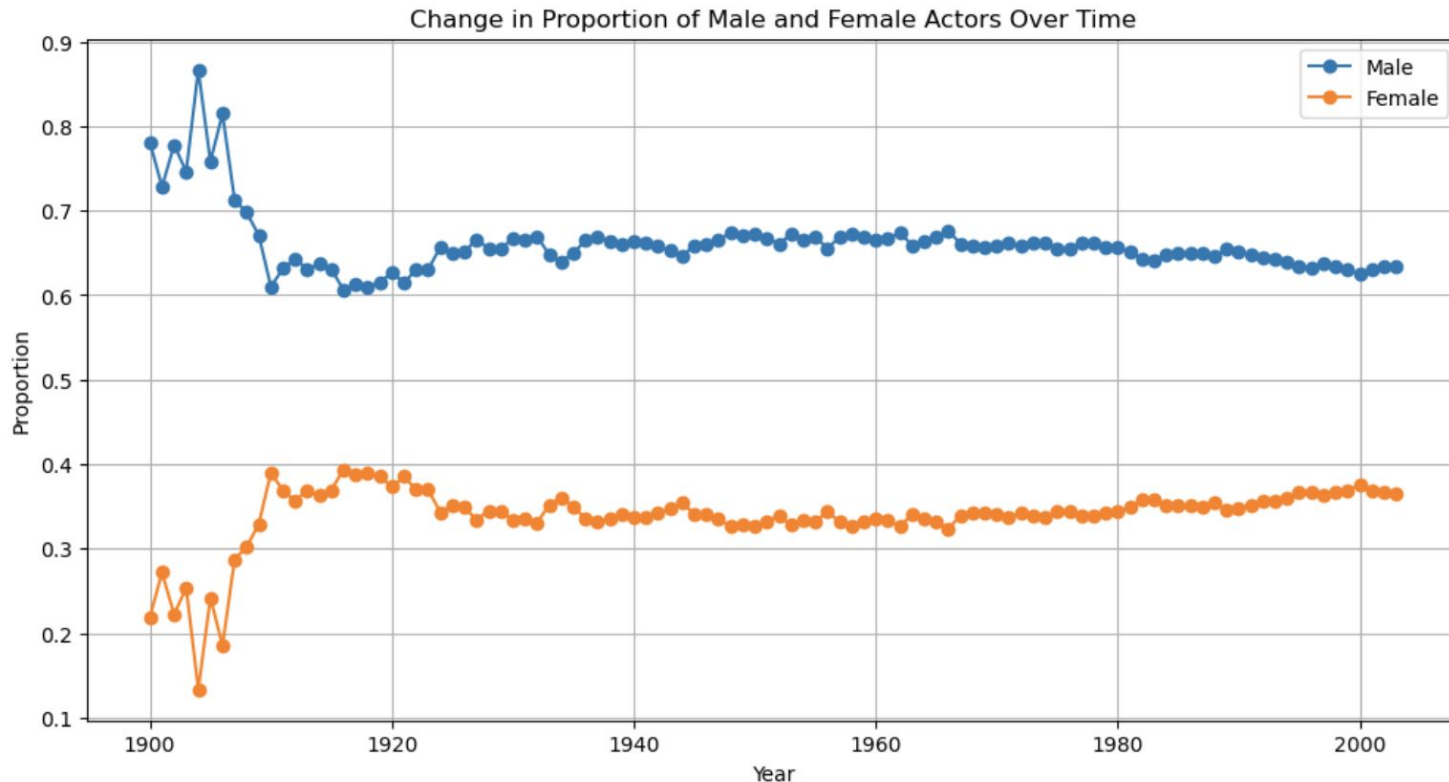
[title.ratings.tsv.gz](#)

1. Fill in missing `rank` data in `movies` table:
Increase the number of ranks from 67,248 to 132,343
2. Add `birth_year` data in `actors` table:
Now 155,075 actors have their birth year information populated.

Identify key indicators and trends

1. Gender gap in presence
2. Gender gap in role-playing

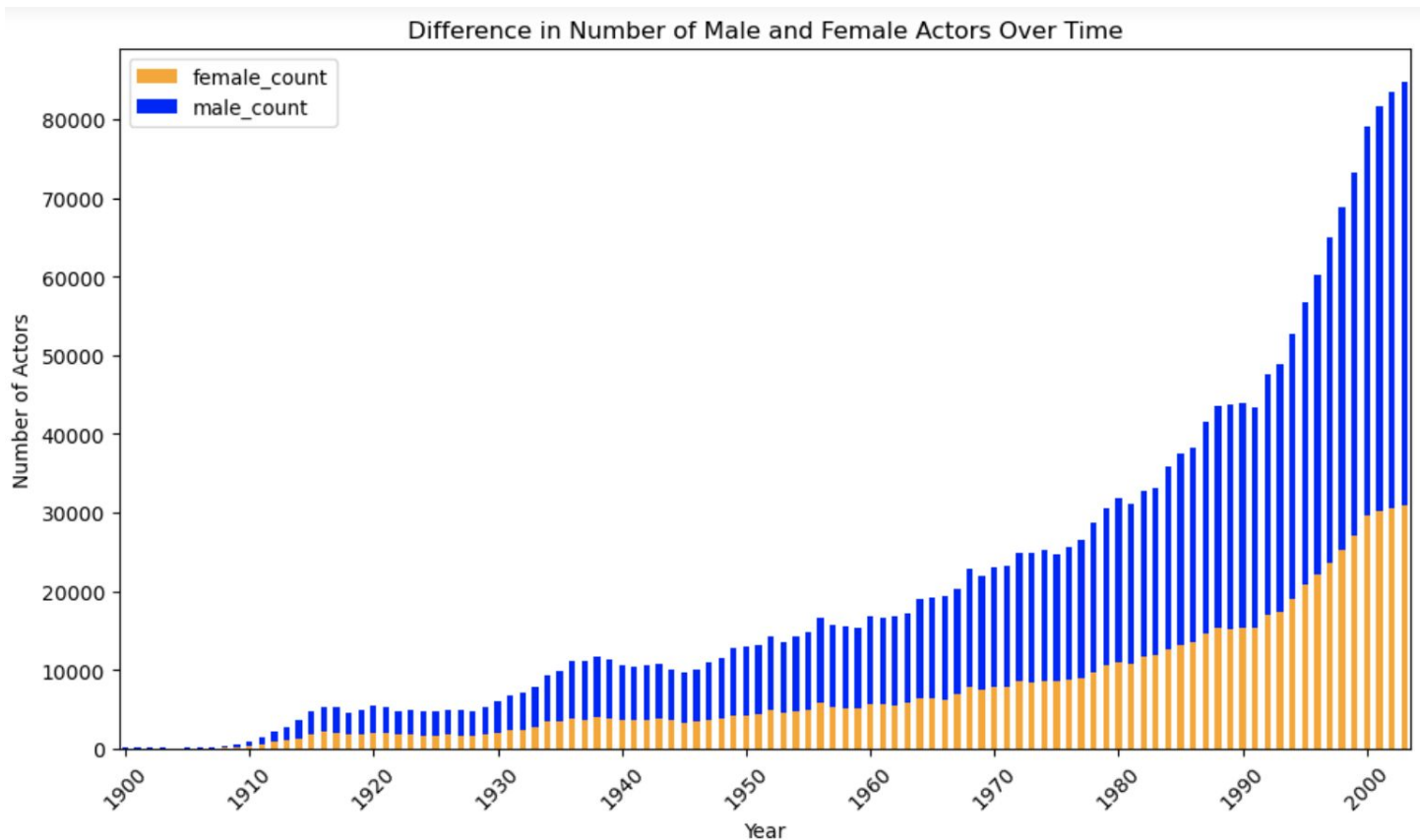
1. Gender gap in presence



Proportion:

- Consistent majority of male actors
- Proportion stable at about 65% male and 35% female
- Early 20th-century fluctuations stabilized by the 1920s

1. Gender gap in presence



Actual number:

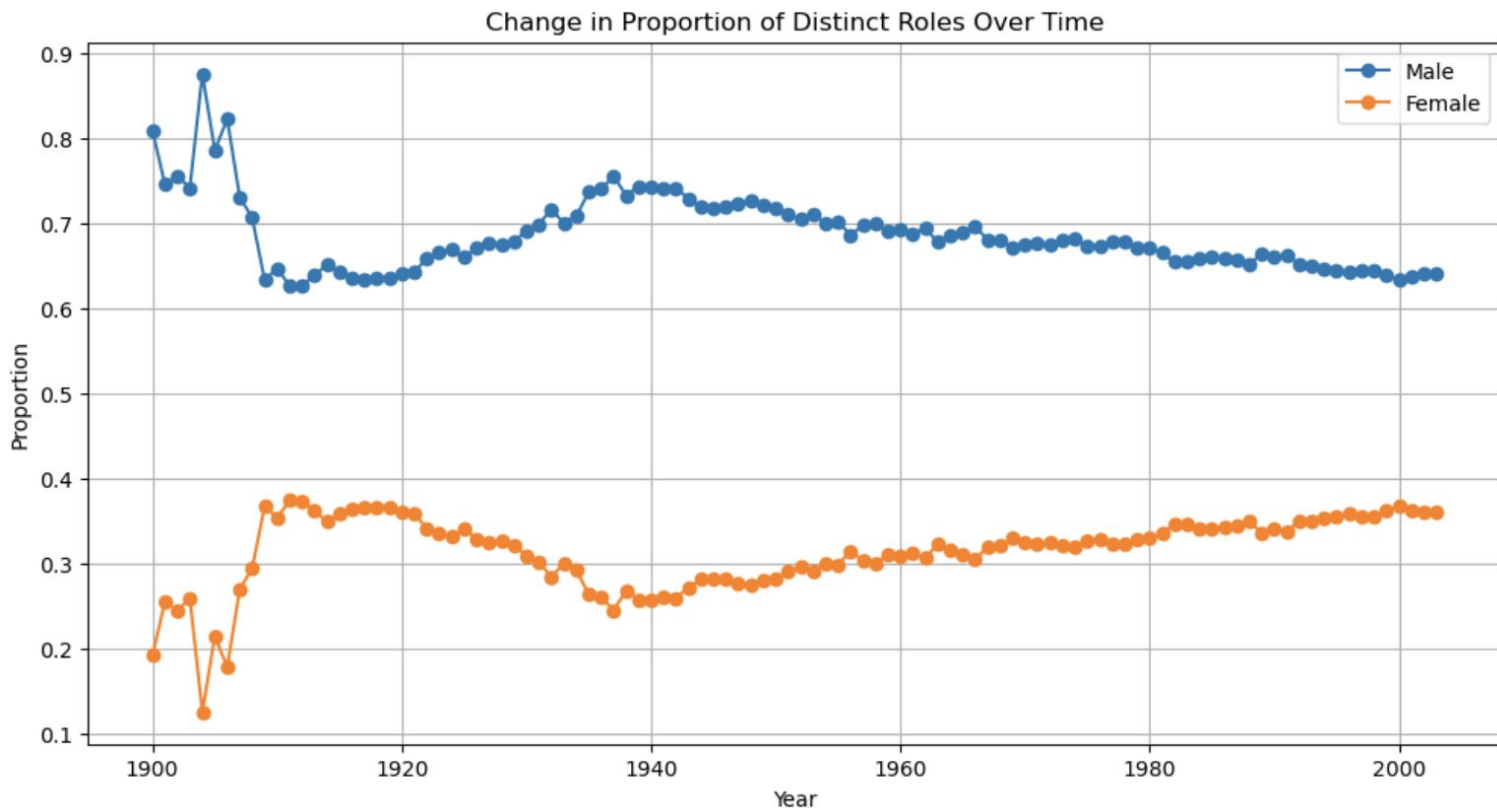
- Overall increase in actors of both genders
- Higher growth rate of male actors
- Significant widening of the gap post-1950s

1. Gender gap in presence

Findings:

- As the film industry expands with more actors over time, there has been a persistent gender gap with male actors being more prominent over the last century.
- The gender ratio has remained relatively unchanged over the last century, with males constituting around 70% of actors.
- The actual number of male actors has grown much more rapidly than that of female actors, suggesting an increasing gender gap in raw counts.

2. Gender gap in role-playing



- Consistent disparity: male dominance
- A slight increase for female actors after 1940
- But overall representation remains constant (30%~35%)

2. Gender gap in role-playing



Men are often cast in authoritative or traditionally masculine roles in positions of power.

Women are often cast in nurturing, service, or entertainment roles.

Larger “Mother”: Women's identities are more closely associated with domestic and family-oriented roles.

2. Gender gap in role-playing

Findings:

- The gender gap in the number of distinct roles available to female/male actors appears to have been persistent, though it became slightly less pronounced over time.
- Traditional gender stereotypes:
Male actors are predominantly seen in roles that are action-oriented, authoritative, or connected to professions that have historically been male-dominated.
Women's roles are more in the realm of caregiving, service industries, or domestic positions.

Identifying possible causes

1. Career longevity
2. Genre
3. Ratings
4. Film series
5. Directors

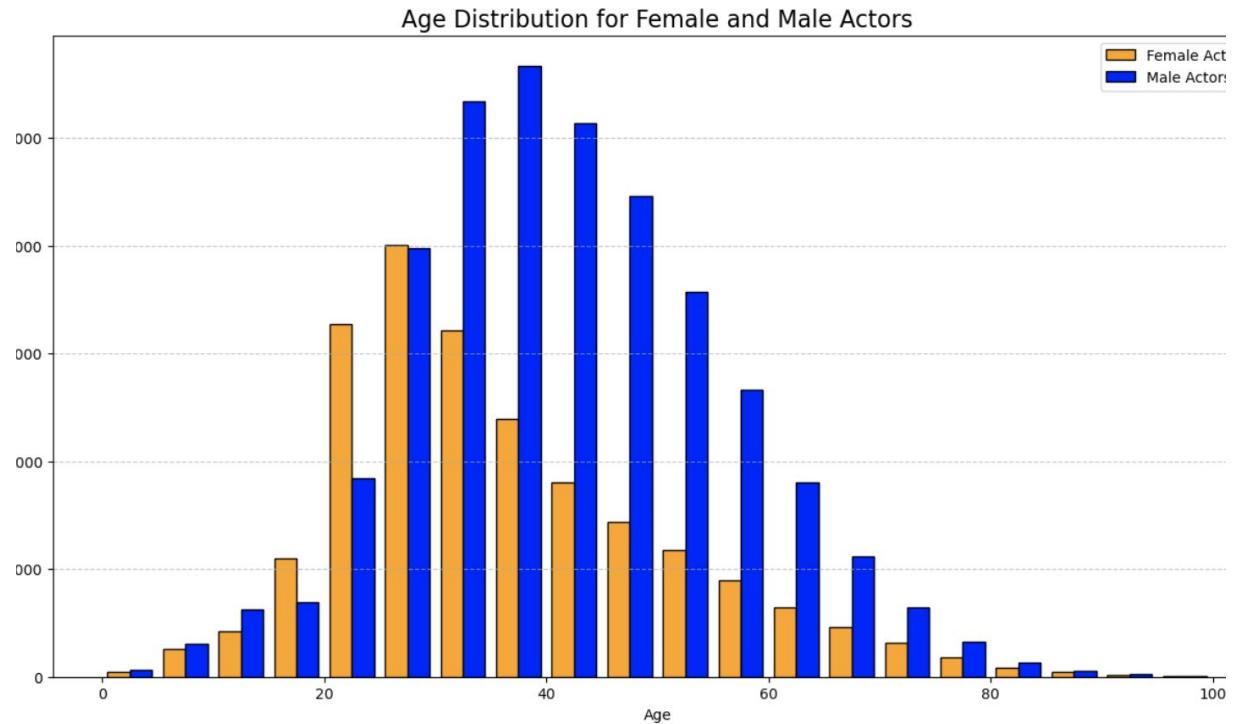
1. Career longevity

Hypothesis: Female actors' careers were shorter than men's, and the proportion of female actors with older age was lower compared to male actors.



- Compare the average professional life span of female and male actors
- Compare the distribution of age for female and male actors

	gender	avg_span
0	M	6.2127
1	F	5.6411



Female actors have shorter professional life span than male actors.

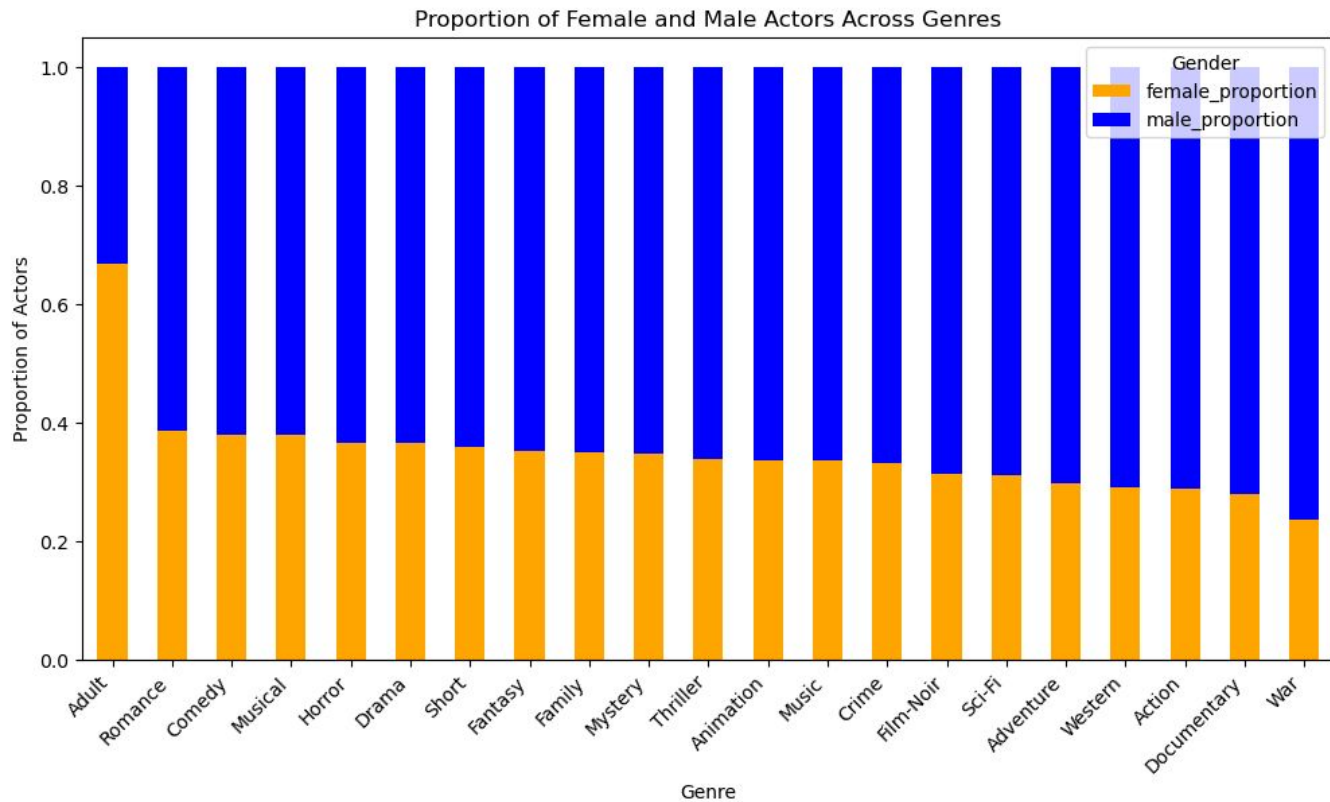
- Peak:
Female: 25-30 years old vs. Male: 35-40 years old
-> a longer professional life for males
- Notable disparity in the 30-60 year range
-> more limited availability of roles for women as they age

2. Genre

Hypothesis: Female actors tend to prevail in limited genres of movies.

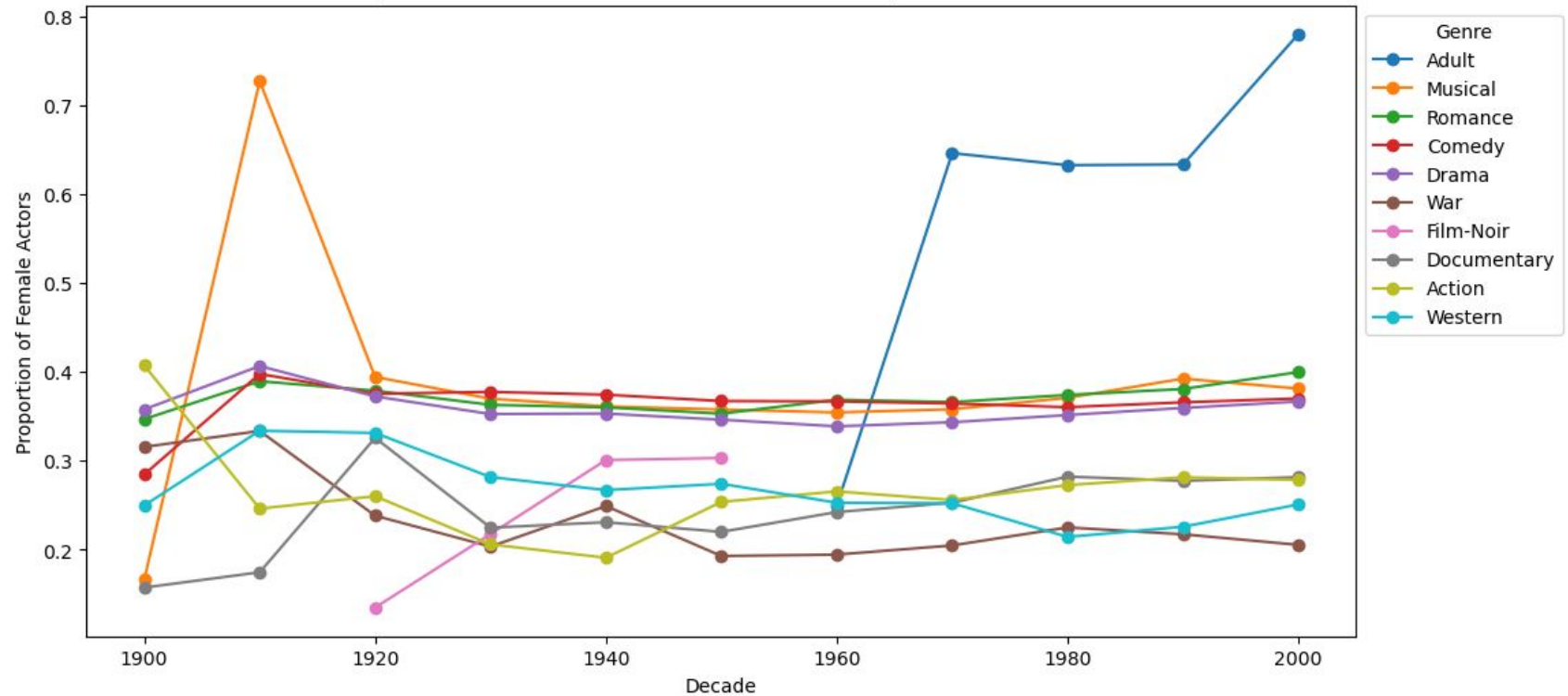


- Compare the proportion of female and male actors across different genres.
- Check if the gender distribution in top/last five genres with the highest/lowest proportions of female actors has notably changed over time



- Apart from adult movies, the proportion of male actors exceeds that of female actors in all other film categories.
- Women tend to play more in genres such as romance and musical while playing less in genres such as war and action, indicating gender stereotypes and expectations represented in role-playing.

Proportion of Female Actors Over Decades for Top & Bottom Genres



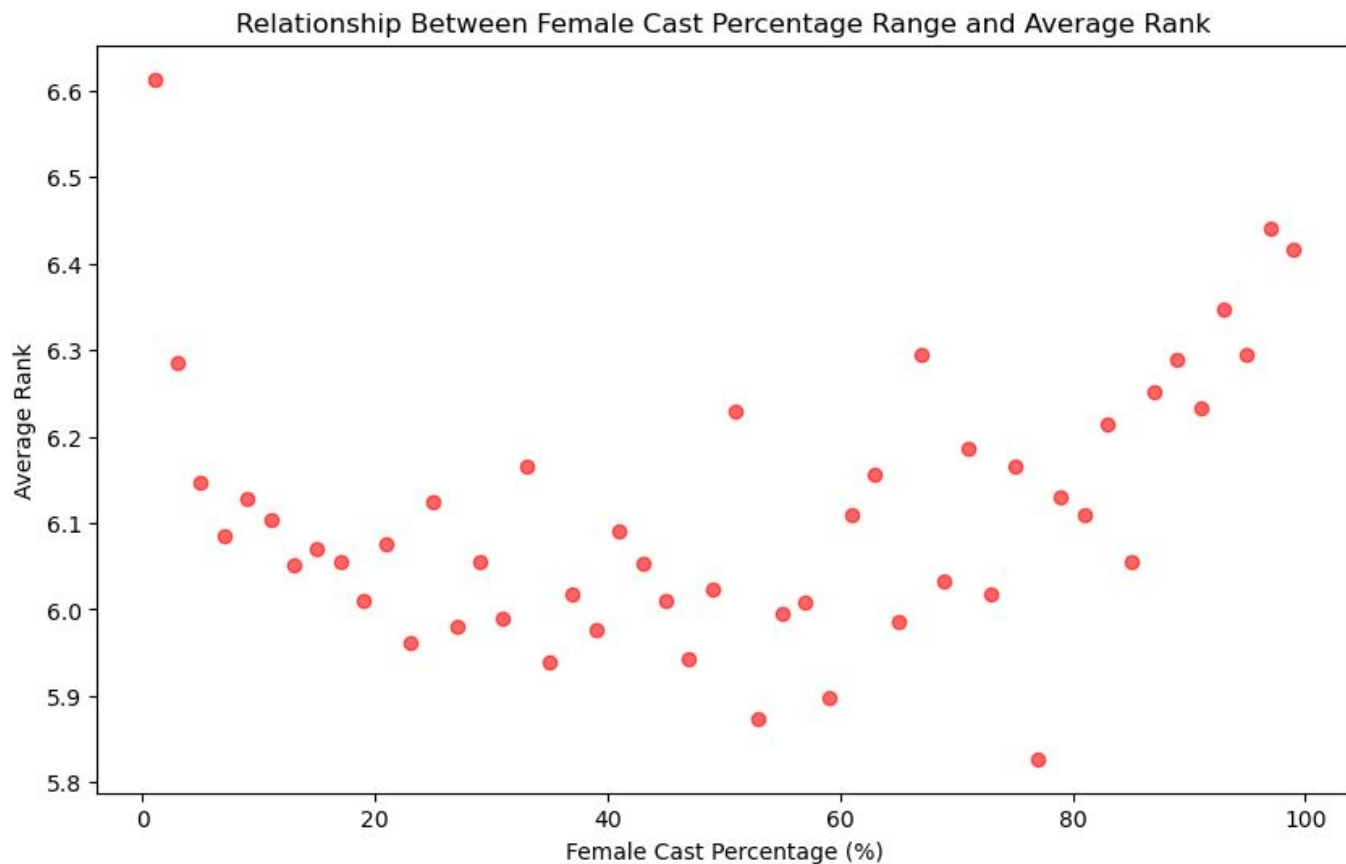
- Top 5 genres: there is a steep increase in the adult genre, the proportion of female actors generally remained stable over the last century, with no obvious trend of concentration or dispersion.
- Last 5 genres: the action and documentary genres showed a slightly upward trend, while the war genre showed a downward trend in terms of the proportion of female actors.

3. Ratings

Hypothesis: Movies with a less balanced gender ratio might receive higher ratings.



Calculate the average ratings of movies based on the percentage of female actors involved.



- There is a weak or no significant correlation between the percentage of female cast members and the average rank of the films.
- However, there are fewer films with a very high percentage of female cast members (above 80%), which echoes the finding that films with predominantly female casts are less common.

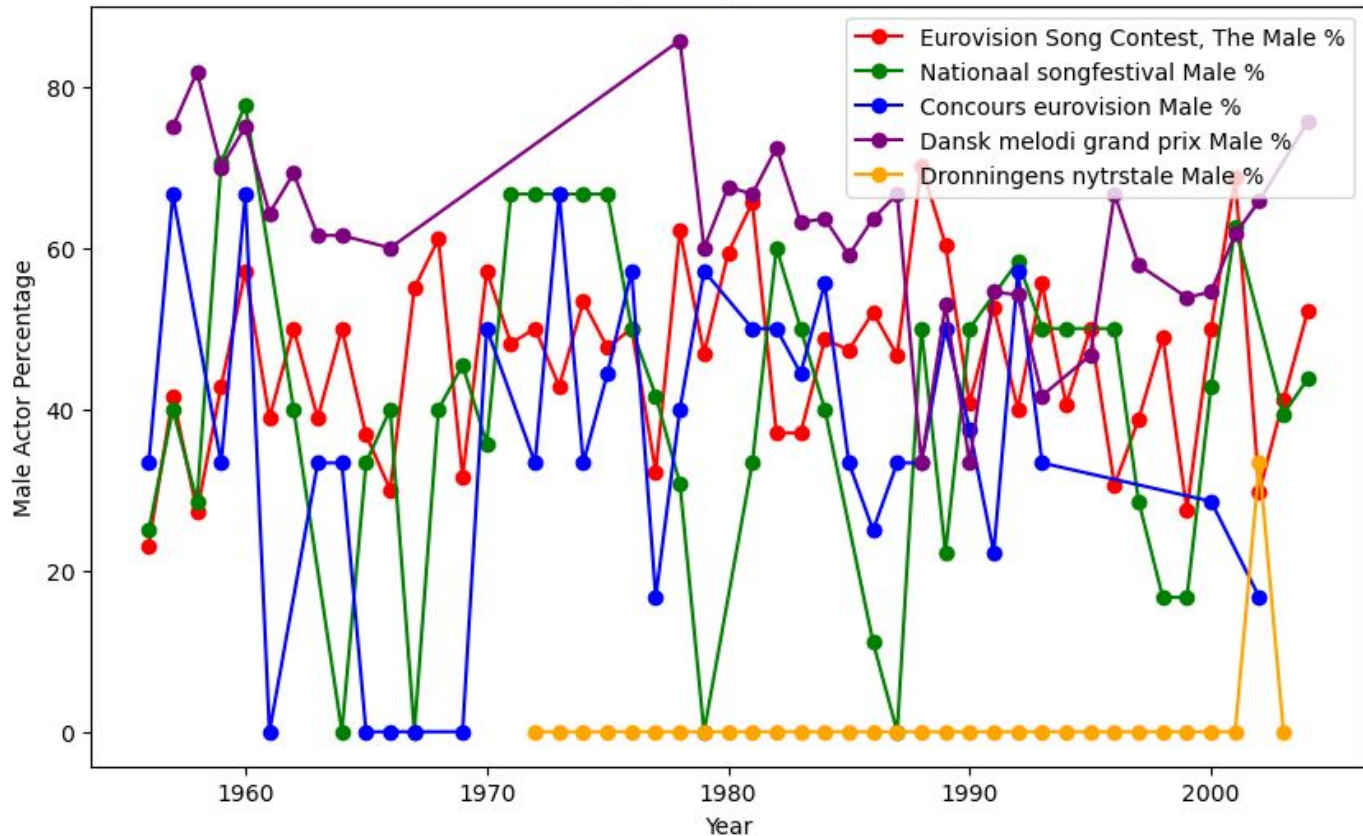
4. Film series

Hypothesis: Movies in the same series may have similar gender ratios.



Select the movies with more than 20 series in the database,
and count for the gender ratio in each movie.

Male Actor Percentage in Top 5 Movie Series Over Time



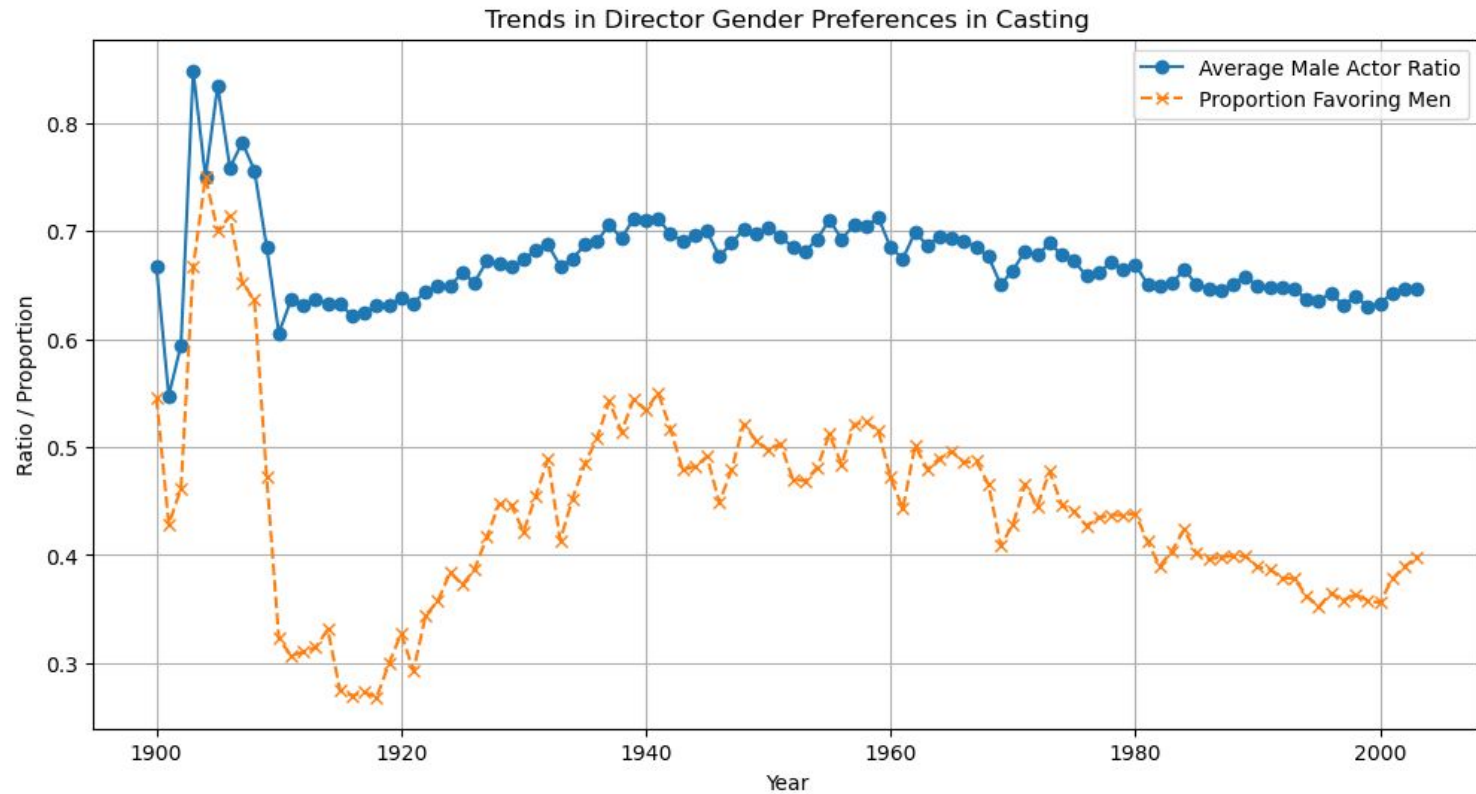
It shows that some movies in a same series have the similar gender ratio, but there are also some movie series that have completely different gender ratio. So this hypothesis can not be entirely supported by the result.

5. Directors

Hypothesis: More directors tend to make films with a higher proportion of men.



Calculates the average male actor ratio for each year and identifies the proportion of directors who predominantly worked with male actors (more than 70% male ratio) each year.



The proportion of directors who prefer to use male actors and the average proportion of male actors have shown the same trends of increase and decrease over the years, indicating the positive correlation between the proportion of directors favoring male actors and the average male actor ratio.