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Gender Equality in European Netflix TV Series Production (2014-2019)[*]

Marta Rocchi[**]
Alma Mater Studiorum - Università di Bologna

Lorenzo Cattani[***]
Alma Mater Studiorum - Università di Bologna

Guglielmo Pescatore[****]
Alma Mater Studiorum - Università di Bologna

Understanding gender inequalities and segregation within the Cultural and Creative Industries is an increasingly key issue in contemporary debates at the national and international level. Several researchers have found evidence of strong patterns of segregation in the media industries, both in terms of "verticality" – women's exclusion from creative and leadership roles – and essentialism – how men and women are usually concentrated in roles that entail the use of skills labelled as "feminine" or "masculine". Hence, with reference to the verticality issue, women struggle to be included as directors, writers, and producers, and are frequently relegated to coordinating roles such as production manager, casting director, or assistant director. At the same time, with reference to the essentialist account of segregation, we find more women in roles framed as more "caring" and "nurturing", such as in the make-up and costume department.
This paper is designed as a quantitative analysis of European Netflix TV series production between 2014 and 2019. Its objectives are: (i) to assess the gender gap within the sample; (ii) to analyse differences in the gender composition among departments in the sample; and (iii) to obtain preliminary indications about a possible relation between on-screen content and off-screen composition.
The paper focuses on 81 Netflix productions in ten European countries. Data were scraped from the IMDb database and the analytical sample is composed of 28,607 professionals (34,312 credits). Besides the cast, available data contains information for 28 departments. Each worker's gender was automatically assigned based on their name, albeit recognising the risks of a gender binary classification scheme, in order to analyse differences in the gender composition among different roles.
Then, a subsample of TV series was isolated, labelled by the literature as relevant for their portrayal of women, gender relations, and for how they represented masculinity and femininity more generally. The paper provides a descriptive exploration of the data, by comparing the gender distribution of cast members and off-screen roles in the overall sample and in the subsample. Results show that in the subsample of TV series deemed to be relevant for their portrayal of gender, among above-the-line professions there is indeed a higher proportion of women directors, writers and producers, meaning that they are no longer male-dominated. However, for below-the-line professions there is evidence of the same pattern of gendered division of labour witnessed in the overall sample.

Keywords: Netflix; TV series; gender equality; segregation; labour.

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[**] marta.rocchi5@unibo.it
[***] lorenzo.cattani3@unibo.it
[****] guglielmo.pescatore@unibo.it

The Cultural and Creative Industries (CCI) are seen as “cool” and rather egalitarian (Conor, Gill, & Taylor, 2015; Gill, 2002). However, several researchers (Gill, 2002; Hesmondhalgh & Baker, 2015) have shown that the industry is marked by serious gender inequalities and segregation. These are crucial issues because the symbolic goods produced by the CCIs might have an influence on the way people think and project their self-image and lifestyles (Polce-Lynch, Myersì, Kliewer, & Kilmartin, 2001; Silverstone, 1994; Wilson, & MacGillivray, 1998).

A recent report has confirmed that the audiovisual industry, and particularly Hollywood productions, is still a “white boys club”, with men representing most of the workforce involved in production (Smith, Pieper, & Wheeler, 2023). However, the exclusion of women from the audiovisual sector cannot be considered as a “Hollywood specificity” alone, since the phenomenon has also been observed in international (Cabrera Blázquez Cappello, Talavera Milla, & Valais, 2021) and national contexts (Fanchi, 2021; Fanchi & Tarantino, 2020; Loist & Prommer, 2019). In the last year, less than two thirds of creators, producers, and directors were women in original U.S. programming (Lauzen, 2021). In general, as Lauzen (2021) states, men represent around 67% of off-screen roles. Women are a minority in the audiovisual sector. This not only points to an overall exclusion of women from the audiovisual industry, but also to patterns of segregation by sex. The observed gender gap in the audiovisual sector is strongly related to the organizational dimension of the CCIs, and it resonates with Acker’s concept of “inequality regime” (Acker, 2006), and how gender inequalities are embedded in organizational structures. Inequality can be seen also in on-screen roles. For instance, in their study of movie social networks, Kagan and colleagues (2020) found that, although centrality of female characters in movies is constantly improving, female characters in films are still a minority and largely excluded from the top-10 most central movie roles.

Napoli (1999) talks about three level of diversity in the audiovisual sector: content diversity, source diversity, and exposure diversity. Content diversity basically covers everything that happens on-screen, from minority representation among cast members to kinds of format or program of a TV series. Source diversity and exposure diversity, on the other hand, both refer to off-screen contexts. Exposure diversity deals with consumption: how diverse is the audience of a given TV series, or how diverse is the consumption of TV content of a given group of individuals. Source diversity focuses on the site of production; this is the dimension that interests us within this discussion. Specifically, we study issues regarding the diversity of the workforce involved in the production of TV series. Henceforth, we refer to this specific dimension of diversity as “off-screen”.

Two issues are of particular importance for women’s off-screen presence. The first regards the overall participation of women in audiovisual productions and the second relates to gender segregation across off-screen roles.

When we consider sex segregation, we must deal with vertical and horizontal segregation with regards to gender. Vertical segregation refers to the idea that women are found in

managerial or editor-in-chief positions less often than men, whereas horizontal segregation refers to specializations within a certain field and is linked to the issue of essentialism. Essentialism is "the belief that men and women are fundamentally different in their capacities, interests, and skills" (Levanon & Grusky, 2016, p. 575), and that one gender is more capable of acquiring certain skills and applying them in the workplace. On the one hand, this belief encourages men and women to make choices that reproduce gender inequalities, while, on the other, it stimulates employers in discriminating against those workers who apply for a job for which they believe different skills are needed. This situation relates to the issues discussed in gender role theory, and the divide between agency and communality (Eagly & Karau, 2002; Heilman & Caleo, 2018; Lyness & Heilman, 2006; Wood & Eagly, 2010). Specifically, gender role theory posits that women are socialized to "communal" values such as empathy, care, altruism, and solidarity, while men are socialized to be "agentic", with associated values like assertiveness, leadership, and aggressiveness (Eagly & Karau, 2002; Hogue, Fox-Cardamone, & Knapp, 2019). Levanon & Grusky (2016) find essentialism to be the strongest source of segregation. According to this school of thought, men and women apply for jobs whose tasks are typed as "masculine or feminine". At the same time, when candidates apply for "gender atypical" jobs, they are usually discriminated against by employers and recruiters (Heilman, 1983; Heilman & Caleo, 2018).

When considering the audiovisual industries, we do see that female employment is highly selective off-screen, with specific roles that are highly feminized or even female-dominated.[1] Hesmondhalgh & Baker (2015) argue that there are specific roles and occupations where a higher number of women are found in cultural industries. They argue that there are roles that entail a lot of coordination and organizing skills which, according to a shared belief, women would be more likely to possess. This would explain why we find more women in roles such as production manager, assistant director, or casting roles. At the same time, the authors state there are roles associated with a specific idea of care and caring, typed as feminine, which explains why many women can be found in make-up and costume departments (Hesmondhalgh & Baker, 2015). This is all very consistent with the essentialist depiction of gender inequalities and segregation in the labour market, regarding the sex-typing of skills.

As part of larger research project on gender inequalities in the audiovisual sector, for this paper we conducted a first exploratory analysis of the gender composition of off-screen roles and of cast members from a dataset composed of European Netflix TV series produced between 2014 and 2019. Netflix is a provider renowned for being sensitive to diversity issues (Albornoz & García Leiva, 2022; Gonzalez-Sobrino, Gonzalez-Lesser, & Hughey**,** 2018; Jenner, 2018), although not specifically on gender inequalities. After this first exploration we isolated a subsample of TV series recognized by the literature as productions that provided a more egalitarian depiction of gender relations, to see if both the cast composition by gender as well as the gender composition of off-screen roles was more balanced. Indeed, there are studies arguing that on-screen representation is linked to the diversity composition of the workforce behind the camera (Krijnen & Bauwel, 2021; Lauzen, Dozier, & Cleveland, 2006; Napoli, 2015). In this context, there is empirical evidence pointing to a positive correlation between the number of women working off-screen and the number of women

that appear on-screen (Glascock, 2001; Lauzen et al., 2006). The objectives of this paper are: (i) to assess the gender gap within the Netflix production between 2014 and 2019; (ii) to analyse any differences in the gender composition among departments of the sample; and (iii) to obtain preliminary indications about a possible relation between on-screen content and off-screen composition.

Research methods and the corpus

To date, the main bulk of research dedicated to the exploration of gender inequality within media industries has often used qualitative methods, such as semi-structured interviews, ethnography and other forms of participant observation (Mayer, 2011; Mayer, Banks, & Caldwell**,** 2009). However, research conducted with qualitative techniques does not allow the comparison of different productions and to see, for example, changes in female participation in the creative process. Qualitative techniques are the ideal choice if researchers want to study how biases and prejudices about gender can be embedded in labour practices, habits, and organizational settings, therefore creating a more hostile environment for women's career advance. For example, Jansson and colleagues (2021), following the production studies approach, analysed how labour practices in the Swedish screen industry are shaped by gendered power structures, through empirical investigation conducted with semi-structured interviews. They concluded that the screen industry in Sweden is marked by a strong gender division of labour. This does not just involve different role composition by gender – they also show that once women enter into the "boys club" they are still treated differently and subjected to discrimination. For example, male directors are more frequently regarded as "geniuses" and "brilliant people", while women are more frequently labelled as less skilled or less competent (Jansson, Papadopoulou, Stigsdotter, & Wallenberg, 2021). Their results highlight the different shades of male dominance (Bourdieu, 2001) inside the screen industry, from the point of view of specific agents (the individuals they interviewed). The value of their research is in showing a different layer of male dominance in the industry. Our aims are different.

We do not want to analyse the ways in which male dominance is reproduced through labour practices. Instead we want to study changes in the gendered structure of on- and off-screen roles, by comparing different productions. This can only be done with quantitative techniques applied to datasets that meet two conditions. First, the datasets must be numerically relevant and harmonized. This means that we must be able to compare the off-screen gender composition between different productions. Second the dataset must have a high degree of specificity in role classification. We must be able to recognize the specific roles involved in each step of the creative process behind an audiovisual production.

For this kind of inquiry, we need data that can satisfy these two conditions. We used the Internet Movie Database (IMDb) as a source of detailed and harmonized data about cast and crew. We built our corpus by selecting European TV series produced by Netflix between 2014 and 2019 in ten countries: Belgium, The Czech Republic, Germany, Spain, France, The United Kingdom, Italy, Netherlands, Poland, and Sweden.[2] We decided to work on a

corpus of investigation made of TV series produced by Netflix because it allowed us to analyse comparable products, avoiding the bias due to large differences in European serial production as a whole.[3] We utilized data from Lumière VoD and IMDb to compile a list of titles and solely relied on IMDb to identify the professionals involved in each one. Indeed, IMDb allows users to gather information about credits at the level of the entire TV series or individual episodes.[4] However, the availability of data for credits collected at the episode level is somewhat problematic due to the higher volume of data for the most popular series. Therefore, data items were considered at series level. Once we identified the titles of the TV series, data was then obtained from IMDb (http://www.imdb.com/interfaces) on 3 November 2022 and processed with a Python script on top of the IMDbPY package (https://cinemagoer.github.io/ecosystem/).

Like many other databases, IMDb lacks proper information about gender, however it does provide information about each person's name and surname. The complete list of names of the professionals listed in IMDb can be downloaded from the website. We proceeded to assign a person's gender starting from their first name, a technique recognized as particularly useful for studies interested in analysing women's situation in the media (Matias, Szalavitz, & Zuckerman, 2017; Santamaria & Mihaljevic, 2018). Based on the names of the professionals involved we automatically assigned genders using the genderize.io API (https://genderize.io/). This name-based gender inference tool also works well with diminutives or nicknames (Menéndez, González-Barahona, & Robles, 2022).

We first applied the generification process to the complete list of names provided by IMDb. In this list men represent 63.20% of the overall workforce, including actors, while women represent the remaining 33.91%, with 2.89% of names that were not assigned to a gender and were kept as NA.[5]

First name gendering for gender determination can lead to some significant critical issues: (i) a degree of error rate, although the literature (Menéndez et al., 2022; Santamaria & Mihaljevic, 2018) shows that the gender bias is extremely small, under 1%; (ii) the creation of local or regional bias due to different gender attribution. For example, the name Andrea in Italy is almost always masculine, while instead the gender identification process assigns it feminine gender; and (iii) the static nature of the biographical data that does not consider gender transitions and transformations, although under certain conditions IMDb allows the modification of one's birth name.[6] However these critical issues appear to be relatively insignificant in the case of large amounts of aggregate data. For instance, within our dataset, we have 0.50% of names without an assigned gender, 170 observations. We also checked missing values and observed no gender bias for non-classified names. To further validate the genderization process, we extracted a random sample of professionals. The group from which it was extracted did not include cast members, for which the genderization process was easier since we assigned the gender if someone was credited as either "actor" or "actress". The group from which we extracted the sample was made up of 19,944 professionals. We extracted a random sample of 738 people, 3.7% of our sample. We found 13 names to be misclassified,[7] 1.8% of the sample.

Data analysis

Overall sample: cast composition and off-screen roles

Data collected considered 81 European Netflix TV series. We gathered data on 28,607 professionals (34,312 credits), distributed across 29 departments or roles. The sample composition by gender is structured as shown in Tables 1 and 2.[8]

	Freq.	Percent	Cum.
Male	22,256	64.86	64.86
Female	11,886	34.64	99.50
NA	170	0.50	100.00
Total	34,312	100.00	

Table 1. Sample composition by gender in the overall sample

	Male	Female	NA	Total
art department	62.33	36.56	1.10	100.00
art direction	59.42	40.58	0.00	100.00
assistant director	58.75	40.67	0.58	100.00
camera and electrical department	85.57	13.99	0.44	100.00
cast	64.94	35.02	0.04	100.00
casting department	34.09	64.94	0.97	100.00
casting director	33.81	65.47	0.72	100.00
cinematographer	92.71	7.29	0.00	100.00
composer	92.04	7.08	0.88	100.00
costume department	17.75	81.02	1.23	100.00
costume designer	21.36	78.64	0.00	100.00
creator	55.36	44.64	0.00	100.00
director	73.72	25.55	0.73	100.00
editor	73.78	25.91	0.30	100.00
editorial department	65.82	33.82	0.36	100.00
location management	74.03	25.35	0.62	100.00
make-up	18.68	80.82	0.50	100.00
miscellaneous crew	50.57	48.63	0.80	100.00
music department	72.20	25.70	2.10	100.00
producer	62.57	37.02	0.41	100.00
production design	66.98	33.02	0.00	100.00
production manager	54.17	45.66	0.17	100.00
script department	21.93	76.90	1.17	100.00
set decoration	27.47	72.53	0.00	100.00
sound crew	81.39	18.17	0.44	100.00
special effects	89.98	8.80	1.22	100.00
stunt performer	81.18	18.55	0.27	100.00
visual effects	76.01	23.11	0.89	100.00
writer	63.67	35.62	0.71	100.00
Total	64.86	34.64	0.50	100.00

Table 2. Cast and crew composition by gender in the overall sample

The cast composition of the whole sample shows a strong predominance of actors over actresses. In our sample we find 64.94% of cast members are men and 35.02% are women. This evidence is consistent with the overall figures discussed by Smith and colleagues (2016) regarding gender imbalances in the audiovisual sector.

When we move to off-screen roles, we find that our data is very much consistent with Hesmondhalgh & Baker's (2015) insights about role segregation. Make-up and costume departments are almost entirely made up by women, while casting department are heavily feminized – very close to the 66.6% threshold commonly used to label an occupation as

segregated (Jacobs, 1989; Torre, 2019). Regarding direction and production, we do find more women in coordination and organizing roles, such as assistant director and production manager, even though in our sample women do not represent the majority of these occupations.

Subsample: on- and off-screen gender composition

Following previous research, we isolated a subsample of TV series (that we called "gender significant") recognized by the available literature for their more egalitarian depiction of gender relations. Our aim is to assess whether there are differences in the subsample of off-screen professions compared to the whole sample. We picked series that either dedicated more attention to the development of female characters (Aruah, 2021; Beaumont, 2021; Brembilla & Spaziante, 2020; Crespi, 2020; Jarazo Alvares, 2022; Wilson, 2022), had a focus on a "strong female lead", had an all-female lead cast, had women portraying persons in leadership and authority positions (Hark, 2021; Lopez Rodriguez & Raya Bravo, 2019; Ozkan & Hardt, 2020; Tous-Rovirosa, Prat, & Dergacheva, 2022), or had over 40 female leads, an age-related issue that is still recognized as a deep source of discrimination against women (Smith, Choueiti & Pieper, 2016). According to these criteria, we isolated a subsample made up of the following ten TV series: *Derry Girls* (2018-2022), *Sex Education* (2019-), *The End of the F****** World* (2017-2019), *The Hockey Girls* (2019-2020), *Cable Girls* (2017-2020), *Collateral* (2018), *Bonus Family* (2017-), *Three Days of Christmas* (2019), *Wanderlust* (2018), and *Crashing* (2016).

Our findings indicate that among the subsample of TV series the data show a different picture compared to the overall sample. Indeed, isolating the productions deemed as "gender significant", we note that the cast composition is around a 55-45 split, a ten-point decrease from the starting 65-35 split when we consider the whole sample (Figure 1).

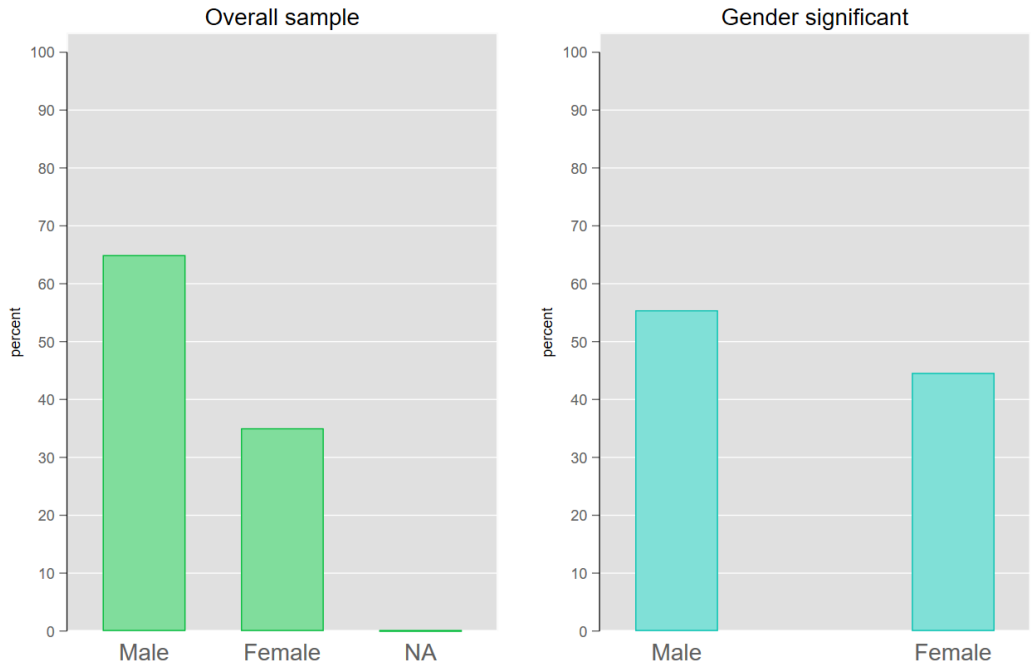

Figure 1. Cast composition by gender of the whole sample and the subsample (i.e., "gender significant" TV series)

Considering off-screen occupations (Table 3), the first thing we should note is that productions deemed as “gender significant” indeed have a higher percentage of women professionals involved.[9] The gender division of the overall sample was roughly a 64-35 split, while among these productions we observe, roughly, a 58-42 split. For off-screen roles we observe an increase in the gender composition that we also saw among cast members, an 8-point increase of the female workforce.

	Male	Female	NA	Total
art department	51.23	47.78	0.99	100.00
art direction	41.67	58.33	0.00	100.00
assistant director	62.70	35.71	1.59	100.00
camera and electrical department	84.32	15.23	0.45	100.00
cast	55.41	44.59	0.00	100.00
casting department	27.59	68.97	3.45	100.00
casting director	31.25	68.75	0.00	100.00
cinematographer	96.15	3.85	0.00	100.00
composer	87.50	12.50	0.00	100.00
costume department	10.34	89.66	0.00	100.00
costume designer	9.09	90.91	0.00	100.00
creator	12.50	87.50	0.00	100.00
director	54.84	41.94	3.23	100.00
editor	75.61	24.39	0.00	100.00
editorial department	70.59	29.41	0.00	100.00
location management	74.63	23.88	1.49	100.00
make-up	12.12	87.88	0.00	100.00
miscellaneous crew	49.52	49.21	1.27	100.00
music department	62.50	35.94	1.56	100.00
producer	47.06	51.76	1.18	100.00
production design	45.45	54.55	0.00	100.00
production manager	46.67	53.33	0.00	100.00
script department	15.56	80.00	4.44	100.00
set decoration	18.18	81.82	0.00	100.00
sound crew	78.75	20.83	0.42	100.00
special effects	83.78	16.22	0.00	100.00
stunt performer	74.71	25.29	0.00	100.00
visual effects	68.03	31.15	0.82	100.00
writer	34.75	64.41	0.85	100.00
Total	58.23	41.19	0.58	100.00

Table 3. Cast and crew composition by gender in the subsample

Moving to the gender composition of specific roles, we have rather mixed evidence. Considering the whole sample, we do see more women in certain roles that in the whole sample are typed as “masculine” because they are classified either as “creative” and/or as “leadership” roles. These above-the-line professions are creator, director, producer, and writer. Figure 2 shows the situation in the overall sample. We have one segregated role (director), two roles that are less significantly segregated (producer and writer), and one more gender balanced role (creator), where men are nonetheless in the majority.

This picture drastically changes when we move to the subsample (Figure 3). We witness a strong surge of women among creators and writers, respectively a 43-point and a 28-point percentage increase, while directors and producers now display a much more balanced picture, very close to a 50-50 split between men and women.

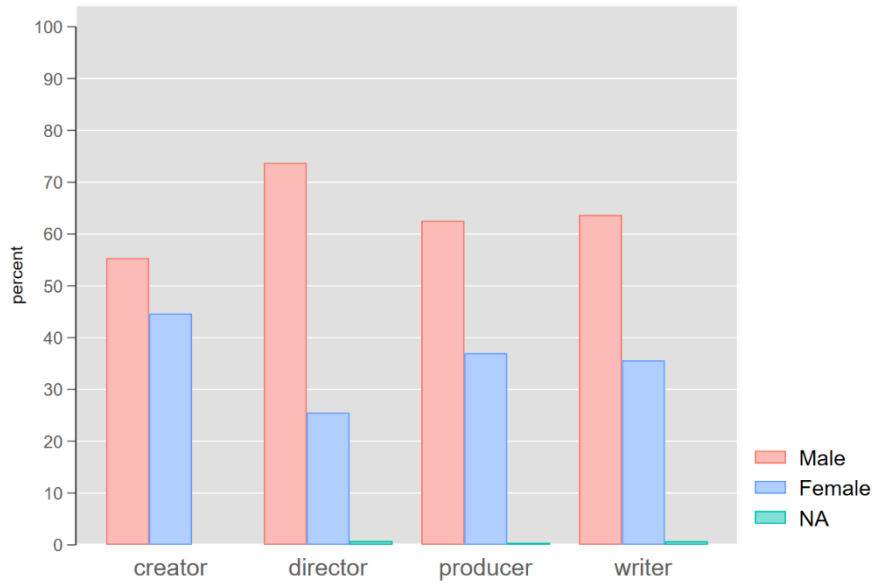

Figure 2. Overall sample: gender composition of selected off-screen roles (above-the-line)

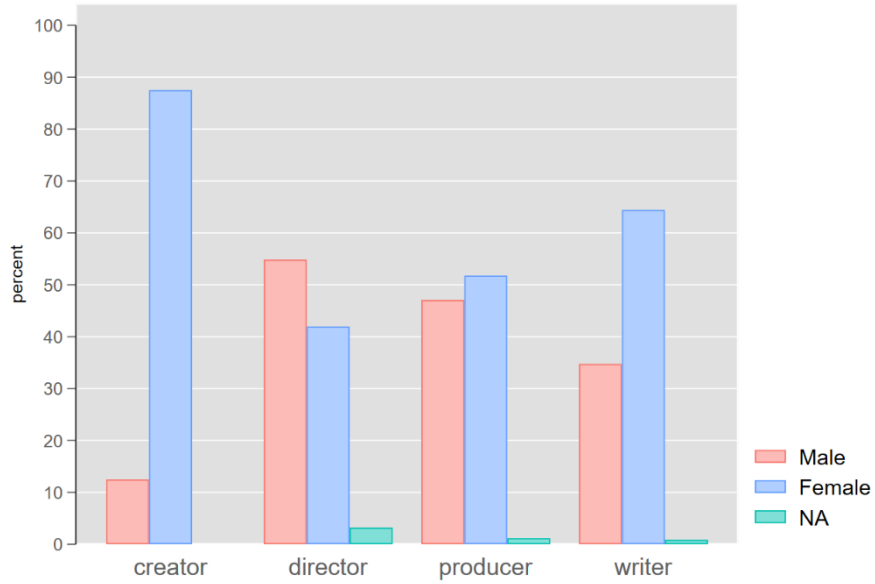

Figure 3. Subsample: gender composition of selected off-screen roles (above-the-line)

However, when we move to below-the-line roles we do not observe changes in the gender composition of comparable relevance. Costume, make-up, and set decoration are still heavily feminized while camera crews, sound and visual departments continue to be male-dominated. To be fair, the percentage of women in visual effects increases by 8 percentage points, which is a noteworthy increment, but the department continues to be segregated. We do observe an important increase in the art department, but otherwise below-the-line roles display the same gendered patterns.

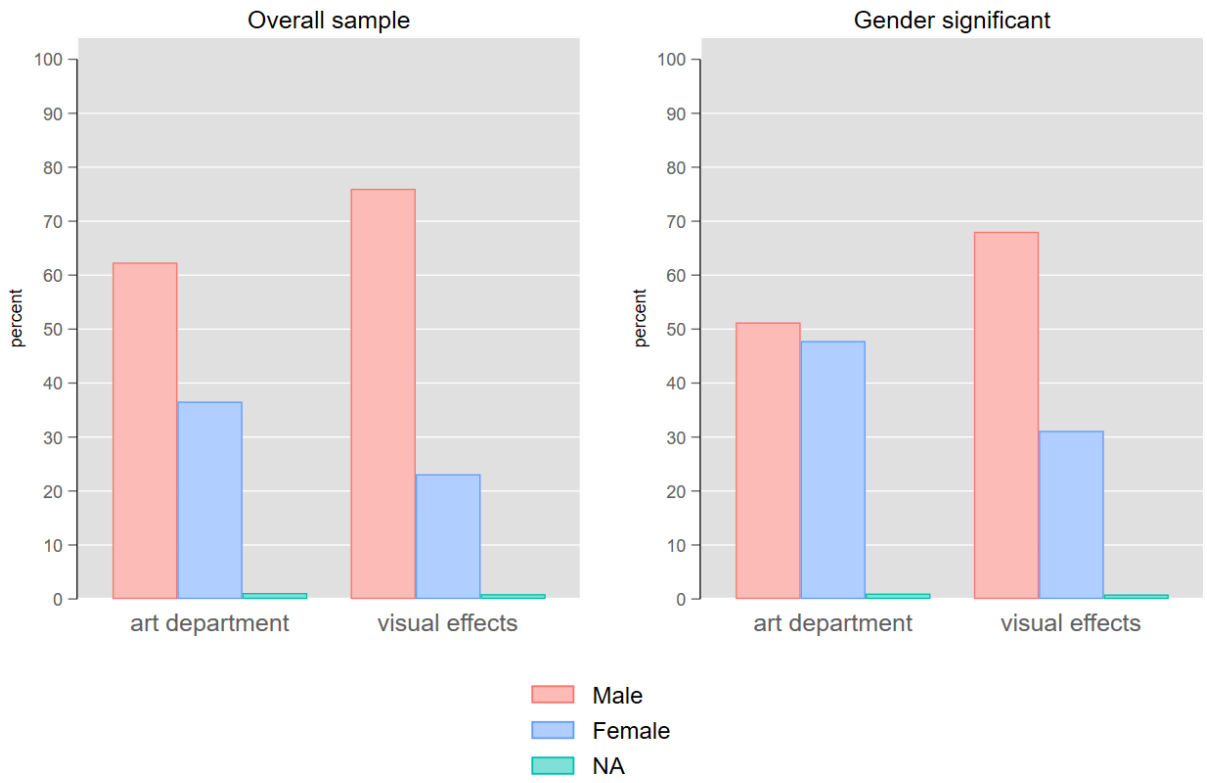

Figure 4 Gender composition of selected off-screen roles (below-the-line) of the whole sample and the subsample

Conclusions

As underlined in the methods section, from a methodological point of view the IMDb critical issues appear relatively insignificant in the case of large amounts of aggregate data. In contrast, the methodology explored in this paper allows for highly scalable data analysis, which can refer comparatively to entire countries or geographic areas or consider time series or different production companies. A similarly high degree of flexibility and scalability should also be sought with regard to the on-screen gender gap: this would allow for scientifically based correlations, and the next steps in this research will go in this direction.

In general, our research indicates that IMDb data is substantially accurate and reliable. With regards to credit composition, IMDb features a vast amount of data with very little missing information. Given that IMDb has information on over 14 million titles of audiovisual productions,[10] it can be considered one of the best sources of data for gaining information on several type of audiovisual production. Additionally, IMDb provides valuable information on other variables that may be of great interest to researchers, such as production typology (e.g. TV series, movies, miniseries) and genre.

Regarding Netflix productions at the European level between 2014 and 2019, the cast and off-screen roles confirm a situation of gender inequality. Considering the cast and some creative roles (creator, producer, director, screenwriter) in the selected subsample (“gender significant” TV series), we observed a relevant change in the gender composition and a

greater female presence. However, when we isolate our subsample of TV series, we do not see relevant differences in the gender composition of below-the-line roles. There is still a dearth of knowledge on how segregation works within social classes or groups of occupations (Charles & Grusky, 2004; Levanon & Grusky, 2016). Based on our data, we can only conclude that there is no significant difference in the gender composition of below-the-line roles between TV series. However, our findings may suggest potential correlations between the gender composition of on-screen and off-screen roles, and certain organizational and productive elements. It is worth noting that empirical evidence on below-the-line roles could also indicate the possibility of "woke washing" effects, as certain TV series may have been marketed in a way that exaggerates their commitment to diversity and inclusion.

In conclusion, these preliminary results might suggest a possible correlation between on-screen and off-screen content, which, however, needs further investigation. Further research will be needed to explore how gender inequalities may be reproduced or reduced in different occupational contexts. Our results show a persistence of gender inequality in below-the-line roles. This may indicate that the way job tasks are typed as "masculine" or "feminine" may be highly contingent on how that specific job is situated in the organizational hierarchy. This tells us that gender essentialism cannot be studied without considering elements pertaining to the way the work is performed, and how gendered assumptions are entrenched in the organizational culture.

Biographical notes

Marta Rocchi is a junior lecturer at the Department of Arts at the University of Bologna. Her research interests concern data-driven approaches to the study of narrative ecosystems, gender inequalities in the audiovisual industry and climate change communication in the screen industries. Her publications include a book, several papers in peer-reviewed journals and a book chapter. Among her most recent publications are: "Modeling Narrative Features in TV Series: Coding and Clustering Analysis" (2022 with G. Pescatore) and "Environmental Misinformation and Audiovisual Serial Narratives: An Automatic Analysis of the Twitter Social Discursiveness on *Seaspiracy*" (2022).

Lorenzo Cattani is a post-doc researcher at the Department of the Arts at the University of Bologna. His research interests involve the study of the determinants of gender segregation in the labor market, with a specific focus on the interaction between gender and social class. He is a board member of the Research Network "Gender Relations in the Labour Market and the Welfare State" of the European Sociological Association. On these topics he published "Active Social Policy and Women's Political Mobilization" (2023).

Guglielmo Pescatore is full professor of Film and Media Studies at the University of Bologna, where he teaches Entertainment Cultures and Media Economics. His studies on television series gave rise to a strand of research dedicated to narrative ecosystems and vast narratives. Characterized by an interdisciplinary approach, these investigations use qualitative and quantitative analytical tools, some of which are biologically derived. On these topics he published "Narrative Ecosystems. A Multidisciplinary Approach to Media Worlds"

(with V. Innocenti, 2017), "The Evolution of Characters in TV Series: Morphology, Selection, and Remarkable Cases in Narrative Ecosystem" (2018 with V. Innocenti), and "Modeling Narrative Features in TV Series: Coding and Clustering Analysis" (2022 with M. Rocchi).

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Notes

[1] We talk about a female-dominated occupation when women constitute more than 66.6% of the workforce of that occupation (Jacobs, 1989; Torre, 2019).

[2] According to the "Audiovisual fiction production in the European Union – 2020 Edition", European Audiovisual Observatory, these States correspond to the top fiction producing countries in number of seasons on average between 2015-2019.

[3] Some of the titles in the sample are productions made by national operators and subsequently acquired by Netflix. However, these products are reasonably homogeneous with the rest of Netflix's original production and we have therefore included them in the sample.

[4] Information about credits is not available at the season level, despite IMDb having data on the number of seasons for each series.

[5] We assigned a person's gender from their first name since IMDb does not provide information on gender. "Missing values" are names to which no gender was assigned. More information can be found in the methodological section where we discuss how we built our corpus of investigation.
[6] Regarding the possible removal of one's birth name from IMDb biographical data, more information can be found at: https://help.imdb.com/article/contribution/names-biographical-data/can-i-remove-my-birth-name-from-my-imdb-biographical-information/GEG7N7F3LPWLKAK3#.
[7] With "misclassified name" we mean a name that is masculine classified as feminine, feminine classified as masculine, or a feminine or masculine name to which no gender was assigned. Four names were masculine classified as feminine, seven were feminine classified as masculine, two names had not been associated to a gender (one was masculine and one was feminine).
[8] Distribution tables are available in the Appendix Table A1.
[9] Distribution tables are available in the Appendix, Table A2.
[10] The stats can be checked at https://web.archive.org/web/20220429162254/https://www.imdb.com/pressroom/stats/.

Appendix

Distribution tables

Table A1 Overall sample: absolute frequencies

	Male	Female	NA	Total
art department	1299	762	23	2084
art direction	82	56	0	138
assistant director	611	423	6	1040
camera and electrical department	3314	542	17	3873
cast	6293	3394	4	9691
casting department	105	200	3	308
casting director	47	91	1	139
cinematographer	178	14	0	192
composer	104	8	1	113
costume department	188	858	13	1059
costume designer	22	81	0	103
creator	31	25	0	56
director	202	70	2	274
editor	242	85	1	328
editorial department	545	280	3	828
location management	479	164	4	647
make-up	224	969	6	1199
miscellaneous crew	1328	1277	21	2626
music department	309	110	9	428
producer	453	268	3	724
production design	71	35	0	106
production manager	312	263	1	576
script department	75	263	4	342
set decoration	25	66	0	91
sound crew	1845	412	10	2267
special effects	368	36	5	409
stunt performer	910	208	3	1121
visual effects	2056	625	24	2705
writer	538	301	6	845
Total	22256	11886	170	34312

Table A2 Subsample: absolute frequencies

	Male	Female	NA	Total
art department	104	97	2	203
art direction	5	7	0	12
assistant director	79	45	2	126
camera and electrical department	371	67	2	440

cast	538	433	0	971
casting department	8	20	1	29
casting director	5	11	0	16
cinematographer	25	1	0	26
composer	7	1	0	8
costume department	9	78	0	87
costume designer	1	10	0	11
creator	1	7	0	8
director	17	13	1	31
editor	31	10	0	41
editorial department	60	25	0	85
location management	50	16	1	67
make-up	12	87	0	99
miscellaneous crew	156	155	4	315
music department	40	23	1	64
producer	40	44	1	85
production design	5	6	0	11
production manager	21	24	0	45
script department	7	36	2	45
set decoration	2	9	0	11
sound crew	189	50	1	240
special effects	31	6	0	37
stunt performer	65	22	0	87
visual effects	83	38	1	122
writer	41	76	1	118
Total	2003	1417	20	3440