CHAPTER 2

The GEM-Index

Constructing a unitary measure of gender equality in the news

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2.1 The status of women in the news: A global issue

The issue in focus in this book is the lack of gender equality in the news media, and in Chapter 1 we explained why it is important to explore the causes and consequences of this problem. A key question is how to measure progress in the news media. Composite indices are frequently used to monitor the status or progress of global developments. An index is a unitary measure that encapsulates key aspects of a phenomenon. Some of the most prominent examples from the media world include the World Press Freedom Index published by Reporters Without Borders and the Media Freedom indicators published by Freedom House. Indices are also common when assessing the advancement of gender equality in general, such as the Global Gender Gap Index (GGI) by the World Economic Forum (WEF) and the Gender Inequality Index (GII) from United Nations Development Programme (UNDP).

The aim of this chapter is to develop such a unitary measure of gender equality in news media content. Although gender and journalism has been on the agenda at least since the 1970s, we still lack a robust and easy-to-use measure to quantify, assess, and track the magnitude and persistence of gender inequalities in the news. By drawing from data collected by the Global Media Monitoring Project (GMMP), we devise the Gender Equality in the News Media Index (GEM-I) – a composite index that estimates the gender gap between women and men regarding their status in the news.

An indicator is an instrument that provides information about the status and progress of a specific process or condition in society (UNESCO, 2012). Indicators have previously been constructed and used to assess the development of gender equality in the media, not the least in media organisations (Byerly,

Djerf-Pierre, Monika, & Maria Edström. (2020). The GEM-Index: Constructing a unitary measure of gender equality in the news. In Monika Djerf-Pierre, & Maria Edström (Eds.), *Comparing gender and media equality across the globe: A cross-national study of the qualities, causes, and consequences of gender equality in and through the news media* (pp. 59–98). Gothenburg: Nordicom, University of Gothenburg. https://doi.org/10.48335/9789188855329-2

2013; Gallagher, 1981; Gender Links, 2015; IFJ, 2009; Padovani et al., 2017). However, the GMMP is to date the only available global data on gender and news *content*, and it constitutes the obvious data source to take as a point of departure for the present study. The GEM-I developed in this chapter builds on the data collected by the GMMP, and it is composed of six indicators available in the GMMP reports that consider the overall presence of women and men as news subjects and as reporters, as well as the representation in gender-sensitive roles and topics.

In this chapter, the GEM-I is methodically tested to be broadly applicable to all forms of news media, easy to apply and rate, and statistically robust and reliable. We also show how the GEM-I can be used to gauge the development of gender equality in news content across time and countries. The empirical analysis presented in this chapter shows persistent gender inequalities in the news media across the globe and predicts that it will take over 70 years to reach full gender equality in news content across the globe at the current rate of change.

The chapter first presents a research review providing the theoretical foundation for identifying and selecting indicators to be included in the GEM-I (§2.2). This is followed by a section presenting the five guiding principles and empirical evidence for the construction of the composite index (§2.3). Finally, we put the GEM-I to practical use by utilising the index in a concrete analysis of how gender equality in the news media has developed across time and between regions (§2.4).

2.2 Measuring gender representation and equality in the news

An often-used contemporary slogan from those who call for better representation in the media is: "You can't be what you can't see".[1] This summarises the growing understanding of the importance of media representations, as it reminds us that the presence of women and men in the media is indeed a matter of social recognition, status, and power.

The normative arguments for gender equality in media representations are anchored in universal values of human rights and freedom of expression and opinion. Gender equality in news content is important because it offers "symbolic recognition", "voice", and "relevance" of and for women in the news (discussed at length in Chapter 1). Symbolic recognition originates from the opportunity to see, listen to, and read about women in a broad range of societal roles. This is essential to counter gender stereotypes that narrow the repertoire of life choices for both women and men. Voice entails women being heard and having a say in issues that affect them and others in society. Relevance emanates from a broadening of the range of news topics and perspectives in the news

by including issues and views that resonate with and emanate from women's lives and experiences.

But how can representation be reliably assessed and quantified to reveal the scale and persistence of gender inequalities in the news? The mere presence of women in news stories is certainly not always a sign of gender equality, but linked to other features and conditions of news production. Tabloid and popularised news may stage women as tokens or attractions when they employ young and visibly attractive women to host television news shows. Women are often cast as victims in crime stories or as "ordinary people" in the news. To be sure, no one would argue that the dominance of half-naked women as "Page 3" girls in British tabloids is a sign of women's status in the newspaper. There are certainly also news beats that are dominated by men, such as sports, without being accorded high status in the field of journalism – or in society. This means that plain "body counting" is not sufficient to reveal inequalities; the type of topics and roles in the news – and the social value attached to them in society and in journalism – must also be considered when evaluating gender equality in news content.

The issue of women's (in)visibility and lack of status in the media has been a prolific area of theorising and empirical research since the 1970s, when Gaye Tuchman (1978, 1979) published the seminal studies in feminist media criticism, accusing the media of conducting a "symbolic annihilation" of women by excluding them from news content. This chapter aligns with this strand of research in defining gender equality in the news media as a state where men and women are represented with equal status in the news. In defining gender equality as equality in status, we underscore the ubiquitous link between representation, social recognition, and power. Status is a multifaceted concept, referring both to the recognition of women as human agents equally worthy of respect (Couldry, 2010; Fraser, 2000)[2] and to status as a primary organising mechanism of social fields, including politics and the media (Bourdieu, 1990, 1998, 2001; Djerf-Pierre, 2007; Melin, 2008).[3] News reporting is gendered in various ways, but there are certainly topics and roles that are particularly "sensitive" to gender-based disparities (UNESCO, 2012), in particular those essential for the empowerment of women both in society (as citizens) and in the field of journalism (as professionals). An assessment of status in the news must thus consider the overall visibility and voice given to men and women, as well as their representation in status-sensitive roles and news topics.

The most ambitious attempt to date to define and assemble a large set of gender-sensitive indicators comes from the pioneering studies from the GMMP, although they do not explicitly use the term. The first study, Global Media Monitoring: Women's Participation in the News, analysed one day of radio, television, and newspapers in 71 countries in 1995 (GMMP, 1995). Since 1995,

the GMMP has measured the pace of change in women's and men's media representation at five-year intervals. In 2015, 114 countries from all regions of the world participated in the data collection (Macharia, 2015) and at the time of writing this chapter, a new analysis is scheduled for 2020.

The GMMP contains the only available data that allow for cross-country comparisons of gender equality in news media *content* with a global scope. The latest version from 2015 presents hundreds of measures of the presence of men and women in various media in stories about various news topics; as news subjects or sources ("people in the news") and in different roles in the news stories; as news reporters and presenters; and women's centrality in news stories, including the extent to which the story focused explicitly on women, gender issues or inequality, and if it challenged gender stereotypes.

UNESCO (2012) has also published a set of "gender-sensitive indicators for media" to be used as a "non-prescriptive" tool for conducting independent evaluations of gender equality in the media as well as an instrument for media organisation to use for evaluation and self-assessment. UNESCO's set of indicators has, to our knowledge, not been put to practice in large scale empirical studies. It is also very extensive, including 27 categories for news content only and stressing both quantitative and complex qualitative aspects, such as the presence of gender-based stereotypes and the inclusion of news topics and perspectives relevant to the lived experiences of women. The similarities with GMMP are still obvious, with a clear focus on plurality and diversity in media discourse:

> Balanced presence of women and men – reflecting the composition of society, and human experiences, actions, views and concerns, in media coverage of news and current affairs. (UNESCO, 2012: 41)

The ambitious scope and extensive number of indicators used by both GMMP and UNESCO make them quite complex to apply in practice. Each provides a piece of the puzzle to the overall gender pattern in the news, but they are also very time consuming to collect and require significant work to analyse. The large number of indicators makes it difficult to determine which are the most important. To aid in the overall assessment, we see a need for a simpler, composite measure that can be used to track the progress of individual countries (and media) across time, as well as provide a basis for comparison of the status of women and men in the news between different contexts – from the level of single media to national samples. Indeed, we concur with Padovani and colleagues (2017) that to be useful, the indicators used in media monitoring of gender equality should be SMART – simple, measurable, achievable, relevant, and trackable.

The starting point for the measure we propose is a definition where gender equality in the media (GEM) is defined as the state where women and men

are represented with equal status in the news.[4] This is operationalised as an absence of gender-based segregation regarding visibility, news beats, roles, and topics. Put in plain language, it is a situation where women and men are equally represented in all roles and topics in the news, including those accorded greatest value, prestige, and importance in society and in the field of journalism. There are, we argue, three categories of gender-sensitive indicators that are particularly important to include when assessing status in the news: presence, topics, and roles.

Presence

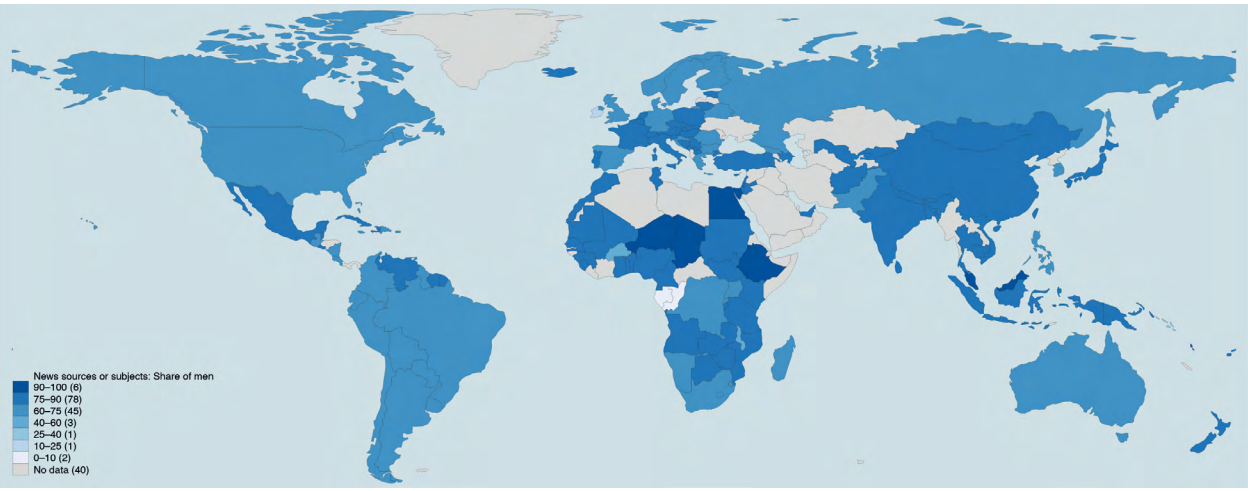
The overall presence of women in the news is fundamental in all empirical research on gender equality in the news. Counting men and women in the news creates a baseline for discussion, and it contributes to answering questions about women's presence and voice and whether they have an equal share of the mediated public sphere (Gallagher, 2001, 2004). Women should have an equal presence in the news as sources or subjects – that is, the news must include women as people worth reporting about and listening to. Without a presence or voice for women, all other aspects of gender equality in the news become void.

The presence of women as "people in the news" (those who speak or are quoted in the news or whom the news is about) has indeed been measured by the GMMP since 1995. The evidence shows a global male dominance (see Figure 2.1), but a small increase in women as news subjects over time, from 17 per cent in 1995 to 24 per cent in 2015 (Macharia, 2015). The largest rise is seen in Latin America (+13% 1995–2015), while Africa saw no increase in women news subjects at all during the same period. Countries in the Middle East started and remained at the bottom of the ladder with over 82 per cent men news subjects in 2015.

The presence of women reporters is also a central aspect of women's overall presence in the news. There are clearly more women as producers of news than news subjects, which reflects the gradual influx of women in the journalist profession across the globe (see also Chapter 5). The GMMP reports show that the share of women reporters in stories increased from 28 to 37 per cent between 1995 and 2015. The largest rise was, again, seen in Latin America (+14%) followed by Africa (+11%). Despite the increase of women, men still dominate as reporters in 2015 in almost all countries of the world (see Figure 2.2). In 2015, 63 per cent of the reporters in news stories in press, radio, and television were men.

Still, the mere presence of women is not always a sign of equality, as emphasised in the introduction. Equality is also a matter of *where* and *how* women and men appear in the news.

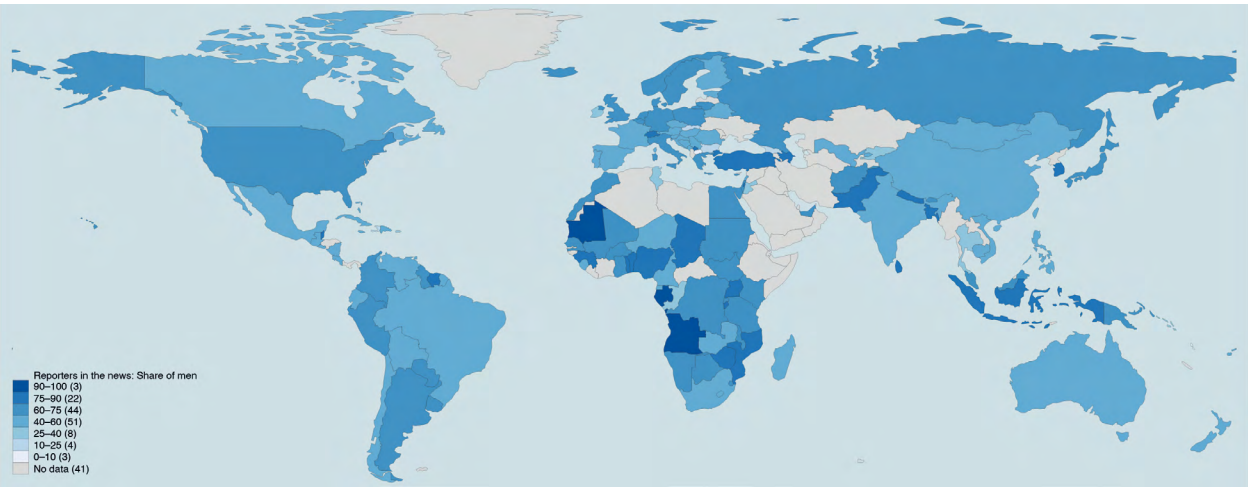
Figure 2.1 *Men as news subjects or sources in the news (per cent)*



Comments: The map shows the percentages of news subjects or sources in the news that are men (grey areas lack data) and includes the latest available observation for each country from GMMP (predominantly from 2015). 150 countries are included. Due to limitations in the SPMAP program, 13 countries are not displayed on the map.

Source: GMMP

Figure 2.2 *Men as reporters in the news (per cent)*



Comments: The map shows the percentages of news stories where men are reporters (grey areas lack data) and includes the latest available observation for each country from GMMP (predominantly from 2015). 149 countries are included. Due to limitations in the SPMAP program, 13 countries are not displayed on the map.

Source: GMMP

Topics

Previous research has demonstrated the pervasive gender-typing of topics in the news, where men dominate the "hard" news and women mostly appear in "soft" news (Djerf-Pierre & Löfgren-Nilsson, 2004; North, 2016; van Zoonen, 1998). This division is firmly rooted in the historical separation of men and women into the public and private sphere, respectively, as well as in traditional role conceptions of women's and men's places in society. The news' political significance is recognised and supported by journalists across the globe, even in countries lacking in democracy (Hanitzsch et al., 2019). The masculine dominance in the "field of power" (Bourdieu, 2001), the semi-autonomous status of the journalism fields, and the news' proximity to political and economic decision-making (Bourdieu 1990, 1998; Benson, 2006, 2015) are reflected in the status hierarchy of news beats. Politics, world affairs, and business news are often seen as a "man's world" whereas social and consumer issues, human interest stories, lifestyle, health, and education are regarded as feminine and accorded lower status. Again, it is the GMMP that provides large-scale empirical comparisons (Macharia, 2015), although there is a plethora of studies on the gender-typing of news based on one country or region (recent examples from various parts of the world include Gender Links, 2015; Mañoso Pacheco, 2018, North, 2016; NWMIndia, 2019; Oladapo, 2019; Ross, 2017; Voronova, 2014; Zuiderveld, 2017). A second dimension of gender equality is thus if women and men have equal opportunity to speak in news topics of importance to citizens in a society, including the hard news of politics and economy.

Roles

Although the inclusion of women in political news is important in and of itself, it conveys nothing about what news subjects actually *do* in the news – in which capacity women and men are included in, for example, a political story. We know from previous studies that women tend to be cast in the role of ordinary people, speaking from and of their personal experience, and more seldom engaged to speak from positions of authority as spokespersons or experts (Macharia, 2015; Franks & Howells, 2019; Niemi & Pitkänen, 2017). The symbolic recognition of women's competences and expertise and granting them a position to represent, act, and speak on behalf of others as spokespersons for political parties, non-governmental organisations, corporations, or agencies, are thus a third criteria of status in the news.

2.3 Constructing a unitary measure of gender equality in the news

Presence, topics, and roles are the three key dimensions to consider when we search for available empirical indicators to include in the GEM-I. The composite measure we propose is based on five guiding principles:

1. It should be theoretically informed and depart from the general definition of gender equality as men and women being represented with equal status in the news. It should consider the importance of the general presence of women in the news, as well as women's presence in key topics and roles.

2. It should be easy to apply and rate. It must be straightforward to measure and code. It should thus include as few and distinct indicators as possible (parsimoniousness) and require analyses of as few sources as possible. This entails that we should focus on the most "important" gender-sensitive indicators – those that tap into the most crucial aspects of gender and status in the news. It also means that we should, if possible, focus on topics and roles that appear frequently in the news, so the estimate does not require very large samples of news stories to assess. For example, news about politics and government as well as economy are regular aspects of news across the globe, and they are also prestigious news beats accorded great societal relevance.

3. It should be broadly applicable, or in other words, be relevant as well as applicable to all forms of news media – radio, television, online, and print – and if possible, also to a broad range of current affairs and documentary genres. This means that we should avoid indicators that are only applicable to certain media, such as women and men as news presenters on television.

4. It should be unidimensional and reliable in statistical terms. This means that it should hold up to established statistical methods and standards for internal reliability of composite indices. From this follows that the constituting indicators should overlap empirically (they should correlate). There are still researchers who argue against the need for such internal coherence when constructing composite measures of social development. Welzel (2013), who is the main architect behind many of the values indices used in the well-known World Values Survey (WVS), instead proposes a "compository logic", which summarises single elements that complement each other conceptually but not necessarily empirically. This principle is, for instance, used to measure presence of equality and choice values in world populations, which in turn are part of the emancipative values composite in the WVS.[5] Hagerty and colleagues (2001) also emphasise the necessity of a theoretical foundation of the individual domains included in an index, but stress the need for parsimoniousness – to reduce the number

of indicators to the minimum required to cover the theoretically motivated domains of the measure. It is thus important that indicators do not overlap so much as to create redundancies. For our GEM-I measure, we aim to select indicators that are both theoretically and empirically valid. If and to what degree the different theoretically relevant gender-sensitive indicators de facto *are* highly correlated is indeed an empirical question, and something we explore further in this chapter.

5. It should consider gender discrepancies in both directions. About 50 per cent of the population are women, and a reasonable target for gender equality in the news is that 50 per cent of all news subjects or sources in all roles and topics be women. The *actual* presence of women and men in various roles and spheres of society, be it politics or care work, must be regarded as potential *causes* of gender disparities in the news, not part of the measure as such. Indeed, the odd relationship between gender equality in the media-world (GEM-I) and the "real world" is evaluated and discussed is several chapters in this book (specifically chapters 4, 6, & 8).

   The fifth principle also requires that an *over*representation of women regarding presence, topics, and roles be regarded as a sign of inequality. From a normative point of view, a far-reaching feminisation of the news is as undesirable as the historically pervasive male dominance. Women already dominate as reporters in some newsrooms, and it is possible that women will soon outnumber men in key reporting areas. Interestingly, most contemporary gender gap indices, such as the GGI, are based on calculating the "female-to-male ratio" in attainments in different areas, and the ratio is truncated at an equality benchmark (WEF, 2018: 5). For the GGI, the equality benchmark is set to 1: A score of 1 means that women have the same attainment as men, whereas a score of 0.5 entails women having 50 per cent of the attainment (be it access to education or ministerial positions). A country that has reached parity between women and men and a country where women have surpassed men are thus given the same score. The index we propose does not put a cap on women's attainment. It is calculated in a way that highlights gender discrepancies in both directions; it gauges a potential surplus of both men and women.

Method

The methodology guiding the construction of the GEM-I is described in great detail in Appendix 2.1, with a step-by-step description of the process of selection and testing. The sequence of statistical tests of frequencies, correlations, dimensionality (principal component analysis), and reliability (Cronbach's alpha tests), plus several robustness tests, resulted in a selection

of six gender-sensitive indicators from the GMMP studies for inclusion in the GEM-I. Each category – presence, topics, and roles – has two indicators, and each indicator includes the percentages of women and men:

Presence
- news subjects or sources (all people in the news)
- reporters (in all stories)

Topics
- news subjects or sources in economy and business news
- news subjects or sources in news about politics and government

Roles
- spokespersons
- experts

The descriptive statistics for the six indicators for women are provided in Table 2.1. The percentage of men mirrors the percentage of women – if 10 per cent of the news subjects are women, 90 per cent are men.

Table 2.1 *Gender-sensitive indicators for women, 1995–2015 (per cent)*

	1995	2000	2005	2010	2015	Total
Presence						
women news subjects or sources	17	19	20	24	24	21
women reporters	38	34	36	38	39	37
Topics						
women news subjects or sources in business & economy news	13	17	17	21	21	18
women news subjects or sources in politics & government news	9	12	13	18	17	15
Role						
women experts as news subjects or sources	–	–	15	21	20	19
women spokespersons as news subjects or sources	–	–	15	20	20	19
n (range)	59–62	63–65	70–75	100–104	102–104	276–410

Comments: n = country-year observations (outliers with limited data are excluded – six country-year observations). The number of country observations in each cell varies between 59 and 104. All variables are from the GMMP study (1995, 2000, 2005, 2010, & 2015) and the values range between 0 (no women) and 100 (all women). Role indicators are unavailable for 1995 and 2000, and the GEM-I can thus only be calculated for 2005, 2010, and 2015. See Appendix 2.1 for full references to the original variable sources.

Source: GMMP

The actual computation of the GEM-I is the simplest possible. It calculates the average gender gap (percentage of women – percentage of men) for all six indicators for each country: (sum of all six indicators for women / 6) – (sum of all six indicators for men / 6). The index can thus vary between -100 (all six indicators have 100% men) and +100 (all six indicators have 100% women). Zero (0) represents full gender equality – or a 50/50 balance – for all six indicators. Appendix 2.2 contains a practical guide for how to code and calculate the GEM-I.

2.4 Results: Men dominate the global news culture

In the following section, we put the GEM-I to practice to learn what it can reveal about the the status of women in the news globally. First, we describe the overall global pattern, followed by an analysis of the changes of the GEM-I across time and regions from 2005 to 2015.

We begin by looking at the index scores for individual countries. Figure 2.3 shows the GEM-I for all countries in the study, using the latest available data from each (predominantly from 2015). The index can vary between -100 (only men in the news) to +100 (only women in the news), with zero (0) as the equality mark.

The most obvious result is that all bars are located to the left of the equality mark (0). This means that men are accorded higher status than women in the news everywhere in the world. Only one country, Bulgaria, boasts a GEM-I with a small surplus of women, and this result aligns with other studies where Bulgaria repeatedly displays a high representation of women in both news content and news production (see Chapter 5 for a discussion on this).

The dominace of men in the news is, indeed, striking. A score of -20 means that the analysed news stories from a given country on average have 60 per cent men and 40 per cent women for the six indicators in the index, which arguably could be seen as the lowest limit for gender equality if we allow some leeway for variation around the absolute equality mark. Only 3 (Bulgaria, Barbados, and Malawi) of the 123 countries had reached or surpassed this threshold for gender equality in the news in 2015 (see Figure 2.3).

Only 18 countries, or about 15 per cent, reached or surpassed what in previous research has been seen as a "critical mass" of women (represented in light blue and white in Figure 2.3). A critical mass constitutes the number required for women to be seen and act as individuals, and not defined as "the Other" or as "tokens" in a social setting (Kanter, 1977a, 1977b; see also Chapter 5 for further discussion). Although the idea of a critical mass has been heavily debated and contested on both theoretical and empirical grounds – "there is little evidence that 30 per cent is a magical cure-all for ensuring the represen-

tation of women" (Grey, 2006: 494; see also Childs & Krook, 2008; Steiner, 2012) – 30 per cent has been suggested as a lowest threshold (Kanter, 1977a, 1977b; Dahlerup, 2006). A GEM-I score between -40 and -20 means having at least an average of 30 per cent women, and can thus be seen as having a critical mass of women in the news.

Most countries (64) in the study fall in the -40 to -60 span of the GEM-I, indicating a male bias largely marginalising women in the news (represented in medium blue in Figure 2.3). Women have a place in the news but are represented with less status – in presence, topics, and roles – than men.

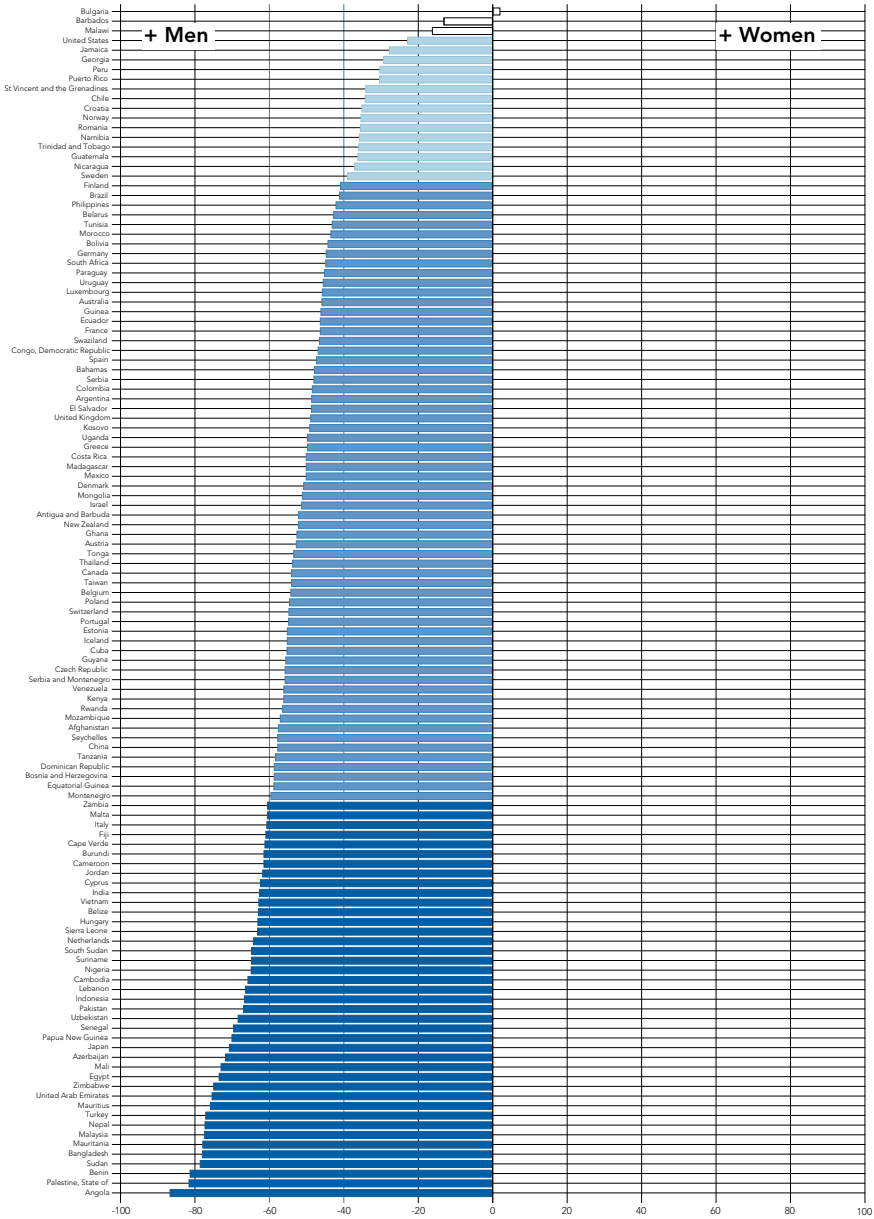
A score below -60 means a near-total male domination in the news, where the six indicators average 80 per cent men or more (represented in dark blue in Figure 2.3). A score of -80 entails complete male hegemony and a de facto annihilation of women in the news; however, only three countries (Benin, State of Palestine, and Angola) score this low, though another six are fairly close to this mark.

So far, we have focused on the present situation using the most recent available data from 2015. Looking at the development over time, we see that change has been rather slow (see Figure 2.4). Between 2005 and 2015, the gender gap in the news shrank from -61 to -53 – an improvement, but still a hefty male dominance.

Unfortunately, the GEM-I cannot be calculated for 1995 and 2000, since role indicators were not included in the earliest GMMP studies. An extrapolation of the scores using the four available indicators yields a GEM-I for 1995 at about -67, and for 2000, -63. This means that since 1995, the rate of change has been about 0.7 scale units per year. Used to predict future developments, it tells us that it will take more than 70 years to reach full gender equality.[6] The GEM-I for 2005–2015 lends itself to more precise and accurate calculations of the rate of change. Based on the average progress for the period 2005–2015, to move from -53 (global mean score 2015) to 0 on the GEM-I will take exactly 72.2 years if the rate of change is 0.734 scale units per year (see also Table 2.7 in Appendix 2.3 for a calculation of the change rate with different sets of controls).

Change is thus still happening, albeit at a fairly slow pace. More importantly, the development of the global GEM-I is clearly not continuous. Between 2005 and 2010, the GEM-I increased by 7 scale units (the average share of women increased from 19.3% to 23.7%), but only a miniscule increase can be seen between 2010 and 2015 (see Figure 2.4). Indeed, even if we include 1995 and 2000 in the calculations, it is evident that the greatest (and only) leap in gender equality in the news media happened between 2005 and 2010. For all the other periods, change has been small or negligible.

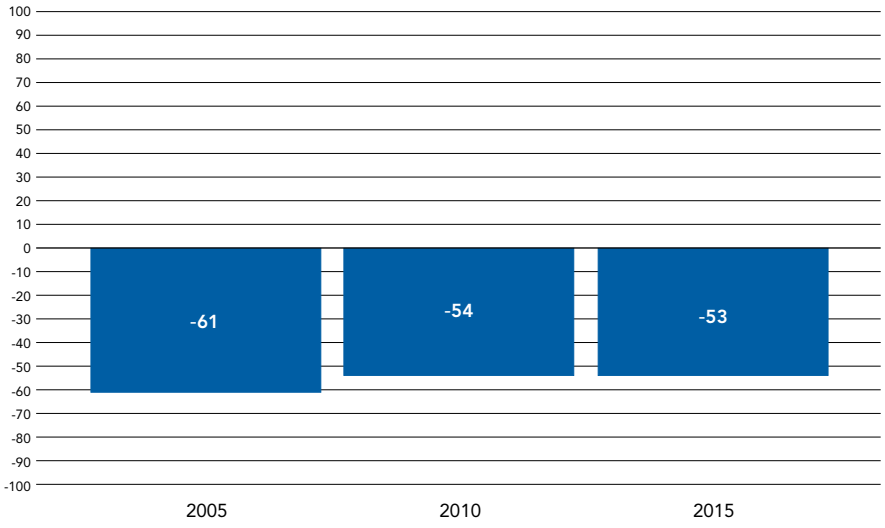
Figure 2.3 *Level of gender equality in the news, by country (GEM-I score)*



Comments: n = 123 country observations (outliers with limited data are excluded – four country observations). The figure includes the latest available observation for each country from the cross-sectional (CS-GEM) dataset (Färdigh et al., 2020), predominantly from 2015. The GEM-I is based on the mean of six gender-sensitive news indicators for each country and year and varies between -100 (all men for all six indicators) and +100 (all women for all six indicators). A score of zero (0) equals full gender parity across the indicators. White bars indicate equality, light blue bars indicate that at least 30 per cent women have been reached, medium blue bars indicate a marginalisation of women, and dark blue bars indicate male dominance in the news. The global mean for all countries is -54.

Source: GMMP

Figure 2.4 *Level of gender equality in the news globally, 2005–2015 (GEM-I score)*



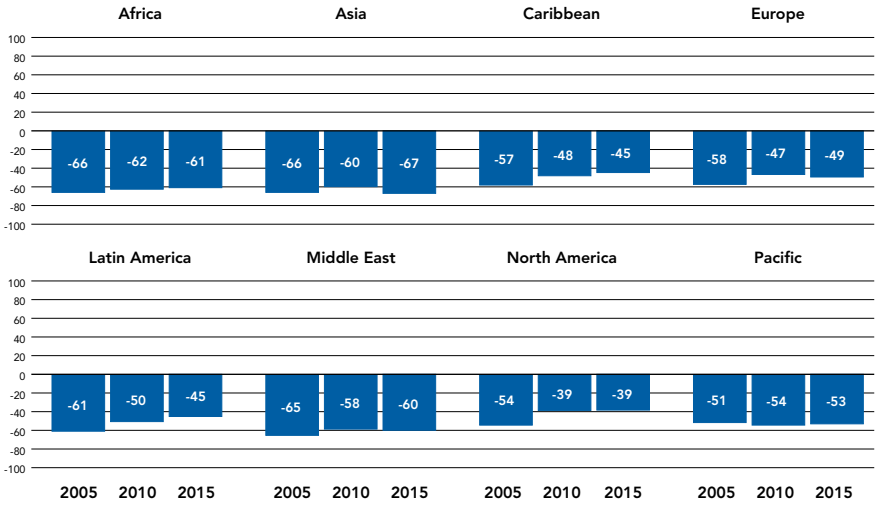
Comments: n = 268 country-year observations (68 from 2005; 99 from 2010; 101 from 2015; outliers with limited data are excluded – six country-year observations) from the TS-GEM dataset (Färdigh et al., 2020). The GEM-I is based on the mean of six gender-sensitive news indicators for each country and year and varies between -100 (all men for all six indicators) and +100 (all women for all six indicators). A score of zero (0) equals full gender parity across the indicators. The global mean for all countries and years is -55.3.

Source: GMMP

The pattern of persistent gender gaps in the news also seems to be a global phenomenon. Figure 2.5 tracks the development in eight regions of the world. There is evidence of change, but it is rather uneven. Greatest progress is seen in Latin America, followed by North America and the Caribbean. In Africa, Europe, and the Middle East, progress has been slow and stagnating in 2015. In countries in Asia and the Pacific, there is even less equality in the news in 2015 than in 2005. More countries have participated in the GMMP in each wave, which means that the figures are not fully comparable since the sample of countries differs. Still, a robustness check looking at the regional averages for the 30 countries that have participated in all rounds of GMMP shows a similar regional pattern.

What is most striking in Figure 2.5 is, instead, the similarities that appear across time and regions. The regional averages for all years are located well below the equality mark, ranging from -66 (Africa and Asia 2005) and -39 (North America in 2015). If anything, the GEM-I in different regions has moved from a state of male hegemony to a state of differential marginalisation of women. Gender equality is not achieved in any region, and the global news culture was, and remains, a world dominated by men.

Figure 2.5 *Level of gender equality in the news by region, 2005–2015 (GEM-I mean score)*



Comments: n = number of countries included (2005-2010-2015) from the TS-GEM dataset (Färdigh et al., 2020): North America (2-2-2); Middle East (2-6-6); Pacific (2-5-3); Caribbean (4-8-12); Asia (12-14-10); Latin America (10-13-14); Africa (14-21-24); Europe (22-30-30). Outliers with limited data are excluded (six country-year observations). The GEM-I is based on the mean of six gender-sensitive news indicators for each country and year and varies between -100 (all men for all six indicators) and +100 (all women for all six indicators). A score of zero (0) equals full gender parity across the indicators. The global mean for all countries and years is -55.3.

Source: GMMP

2.5 Conclusion and discussion

Gender equality in the news media (GEM) is defined in this study as a state where men and women are represented with equal status in the news. In this chapter, we devised a unitary measure that can serve as a tool to gauge the development of gender equality in news content across time and countries. By drawing from previous research on gender and media, and after comprehensive statistical testing, the index is constructed to be theoretically informed, easy to apply and rate, broadly applicable to all forms of news media, and unidimensional and reliable in statistical terms.

By utilising previously collected data from the GMMP, the GEM-I considers the overall presence of women and men in the news, as well as their visibility and voice in specific gender-sensitive roles and topics.

The GEM-I calculates the average gender gap in the news (percentage of women – percentage of men) for the following six indicators available in the GMMP reports:

Presence
- news subjects or sources (all people in the news)
- reporters (in all stories)

Topics
- news subjects or sources in economy and business news
- news subjects or sources in news about politics and government

Roles
- spokespersons
- experts

The GEM-I can vary between -100 (only men in the news) and +100 (only women in the news). Zero (0) represents full gender equality – a 50/50 distribution of men and women for all six indicators.

The analysis of the GEM-I across time and space shows that the status of women in the media-world of news varies between different countries and regions. We discern three categories of news cultures deriving from the variations of women's status in the news:

1. Invisibilisation is a news culture where women are generally invisible in the news, both as reporters and news subjects, and only have an occasional presence in peripheral roles and topics. This type represents the symbolic annihilation of women, as described by Tuchman (1978). In 2015, quite a few countries in the world remain at this bottom stage of gender equality.

2. Marginalisation is a news culture that to various degrees marginalises women. Women have a regular, but unequal, presence in the news and more seldom appear in roles and topics gender-typed as masculine, such as politics and economy. This is where most countries in the world are located. The level of marginalisation varies, however, and only in about 15 per cent of the countries in the study have women reached a critical mass in presence, topics, and roles – which could be assumed necessary for women to be seen and act as individuals in the news.

3. Equality requires that women be represented equally to men in all roles and topics in the news, including those that are accorded highest status in society and the journalism field. This is when women may cease to be recognised as "women experts" or "women spokespersons" and attain full humanhood in the media-world. This egalitarian news culture may also entail that actual news values, news practices, and status hierarchies are redefined; this is, however, not at all guaranteed, and in 2015, only a few countries have attained this level of equality in status in the news.

The results from this study thus shows that hardly any past or present news cultures have de facto attained the level of equality. Indeed, the main takeaway from the study across countries and over time is the systematic and persistent *inequality* in news content. If the current rate of change remains, it will take over 70 years to reach full gender equality in the global media-world of news. The news culture around the globe was, and remains, male, despite the feminisation of the profession in many countries in the world.

It is also important to remember that the GEM-I does not claim to measure all possible expressions of gender inequalities in the media. Some persistent facets of media sexism are difficult to measure in simple terms and may be revealed either by conducting more advanced and extensive quantitative studies or in qualitative analyses of how men and women are treated and discursively constructed in the news.

The focus of this chapter was to construct and describe the GEM-I as an easy-to-use tool for gauging the state and changes of gender equality in the news – the *causes* of the lack of gender equality are dealt with in other chapters of this anthology. It is still obvious that the level of gender equality in society only partially relates to regional and cross-country differences in GEM-I (see also Chapter 4). The countries and regions ranking the lowest in GEM-I often place low in rankings of gender equality in society, such as the Global Gender Gap Index (GGI). This is expected, but more peculiar is the large variation in societal gender equality among countries and regions at the upper half of the GEM-I ranking. Here, we find a selection of countries from all regions of the world, and nations that consistently rank the highest in the GGI, such as the Nordic countries, do not top the GEM-I chart. Bulgaria, the leader of the GEM-I ranking, is a country that consistently performs well in studies of gender representation, but where historical and cultural prejudices against women still remain (Nastasia & Nastasia, 2013).

What we see is rather a relative disconnect – and in some cases complete disjunction – between gender equality in the media and gender equality in society at large. This is indeed yet an indication that journalism is, as Bourdieu and others claim, a semi-autonomous social field. The media in some countries have reached further than the rest of society; in other countries, the media are lagging behind. Bulgaria took the lead in the GEM-I in 2015 but ranks 41 in the GGI. Malawi ranks 67 on the GGI but third on the GEM-I. Rwanda exemplifies the opposite pattern, placing fifth on the GGI but far down the list at rank 74 on the GEM-I.

Suffice it to say that gender equality in society is only partially reflected in the gender equality of the news. To provide a context for understanding the origins of gender inequalities in the news, we instead want to put focus on the global news culture. Journalists in different countries tend to practice their professional work in very similar ways. Indeed, the Worlds of Journalism com-

parative study of the professional attitudes of journalists in the world found few gender differences in professional outlook between women and men in the 67 countries studied (Hanitzsch & Hanusch, 2012; Hanitzsch et al., 2019; see also Reich, 2013). Women and men are socialised into the same professional norms, practices, and values. And as this chapter clearly shows, these are all parts of a global masculine news culture – what men do, think, and are, are generally deemed more interesting and important than the thinkings and doings of women.

Although the study sustains the longstanding male dominance in the news, there are still changes to be noticed. The largest influx of women in the news occurred between 2005 and 2010, and in 2015, the development seemed to stall or even decline. Indeed, the proportion of people in the news that are women seems to cap at one-third, not only for the indicators used in the GEM-I, but for most news topics.[7] The only indicator with a prevalent surplus of women is the share of women reporters, but the global average for this indicator was still 39 per cent in 2015. There are also many blank spots – countries that rarely or have never contributed with data, and where the status of women and men in the news remains unexplored (see Chapter 1). When collecting the data for this chapter, the latest available GMMP study was from 2015. At the time of writing, a new GMMP round is in preparation for 2020, and it should reveal if 2015 only represents a temporary setback for the development of gender equality in the news. It remains to be seen if the world picks up the pace towards greater equality or if the news media world stays dominated by men.

The GMMP is a formidable undertaking largely driven by and leaning on the voluntary – and often unpaid – work of scholars and activists. The main purpose of the GMMP was, and still is, to give a snapshot of the state of equality in the news at the global and regional level. It was never meant to be used for comparisons at the level of individual countries. The present study has yet provided evidence for its broader usability, demonstrating that country-level data from the GMMP house great potential for academic research. There are certainly limitations, and larger samples of news should make the measures more precise and less volatile. Still, the utilisation of multiple indicators to measure a common domain is a well-known scheme to reduce measurement errors in statistical analyses. The composite index we developed in the present study will provide an easily applicable, statistically validated, and robust measure of gender equality in the news, to be used across time and space.

Notes

1. The quote is used by many; it is mentioned by, among others, Marie Wilson, founding president of the White House project in the 2011 documentary *Miss Representation* by Jennifer Siebel Newsom. (It could also originate from Marian Wright Edelman, founder and president of the Children's Defense Fund.)
2. Couldry (2010: 96–107) states that the "capability of voice" is one of the essential human capabilities and roots his argument in critical theorist Axel Honneth's concept of recognition and the concept of freedom in Nobel laureate Amartya Sen's capabilities approach. Nussbaum (1999, 2003) argues that the capabilities approach to social justice differs from the human rights approach (although closely related) in that it focuses from the start on "what people are actually able to do and be" (2003: 39) and that the capabilities approach is particularly useful for the critical discussion on the development of gender equality:
   > It is well placed to foreground and address inequalities that women suffer inside the family: inequalities in resources and opportunities, educational deprivations, the failure of work to be recognised as work, insults to bodily integrity. Traditional rights talk has neglected these issues, and this is no accident, I would argue: for rights language is strongly linked with the traditional distinction between a public sphere, which the state regulates, and a private sphere, which it must leave alone. (Nussbaum, 2003: 39)
3. Research in psychology has furthermore shown that the strive for status is, indeed, a universal and fundamental human motive, and it is distinct from related constructs such as power, financial success, and belongingness (Anderson et al., 2015).
4. The GEM acronym also stands for Gender Equality Marker, but it is used for other purposes within the OECD and United Nations systems and does not address the media (United Nations, 2018).
5. Choice values emphasise the support for sexual and reproductive choice and is measured by three indicators: how acceptable respondents find 1) divorce, 2) abortion, and 3) homosexuality. Equality values focuses on gender equality by measuring how strongly respondents disagree with the statements that 1) "education is more important for a boy than a girl", 2) "when jobs are scarce, men should have priority over women to get a job", and 3) "men make better political leaders than women" (Welzel, 2013).
6. To move from -67 to -53 (a decrease of 14 scale units) in twenty years corresponds to a rate of change at -0.7 per year. To move from -53 (mean for 2015) to 0 will thus take 75.7 years. To move from -53 to -20 (lowest threshold for equality) will take 47 years.
7. The global means of women news subjects in GMMP are: science and health (27%); social and legal (28%); crime and violence (23%); and celebrity/art/sport (24%) (TS-GEM dataset).

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Appendix 2.1 Constructing the GEM-I

Step 1: Defining a core indicator and listing possible candidates

The process of selecting indicators for the index started by listing the most relevant gender-sensitive indicators highlighted in previous studies, as described earlier in the main text of the chapter. While determined to test a broad range of indicators, we deemed the general presence or absence of women in the news as a core indicator that is necessary to include. It is quite evident that if there are no women news subjects or sources in the news, the issue of the status accorded to different roles and topics becomes void. We also wanted to make sure to include indicators of the visibility of women journalists in the news reports (or in bylines) for similar reasons.

Step 2: Searching for patterns by testing frequencies and correlations

The second step was to explore the data from the Global Media Monitoring Project (GMMP) to scrutinise the indicators available in the GMMP reports. All variables from the GMMP were pooled together in one dataset: the GEM dataset (Färdigh et al., 2020). The GMMP comprises hundreds of measures, each tapping into different aspects of news content that are relevant to gender equality. In line with the basic principles for constructing a composite index described earlier, we focused on indicators that are 1) available across time and not just for a single year; 2) present in all forms of news media, and not just for an individual medium such as radio, television, or the press; and 3) appearing frequently enough in the news so that it can be reliably examined and gauged without having to study many weeks of news reports.

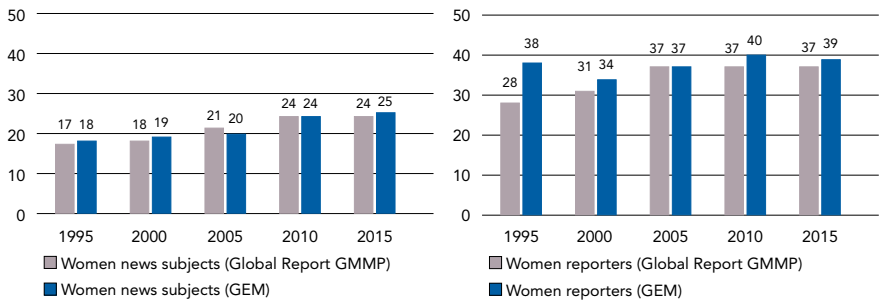
Data collection for the GMMP is conducted by coders in each participating country analysing one day of news output in press, radio, and television from that country; the results are aggregated into national averages. The number of media in the sample varies depending on the size of the country and charac-

teristics of the media sector. To devise an index, we need a large enough set of observations for each country. Some news topics and roles appear more seldomly, which may result in a too small (or missing) sample of those indicators.

All GMMP variables are coded dichotomously (binary), by differentiating the shares of men and women in news content. For each news story, the coder registers whether each individual news subject or reporter is a man or woman, based on how they are presented in the news (name, pronoun, appearance, byline). In recent studies, GMMP also includes a third option for coding gender; this is an important choice, but the third option only appears in miniscule numbers in the news stories, leading GMMP to exclude it in their reports. This means that in the coding of gender in GMMP, the categories of man and woman are mutually exclusive, both regarding reporting roles and news subjects or sources. A detailed description of the coding principles and variable definitions used by GMMP is presented in Appendix 2.2.

The GMMP reports focus on estimating global and regional averages, and the data from each country is weighted to reflect the population size and media density in different countries. For our study, we use the unweighted data, and each participating country, large or small, is given the same weight. However, the difference in results is small, as shown in a comparison of the measures in the GMMP reports and the present study in Figure 2.6.

Figure 2.6 *Women news subjects and women reporters, GMMP and GEM-TS compared, 1995–2015 (per cent)*



Comments: The GMMP global report figures are retrieved from the 2015 report (Macharia, 2015) and use country-weights. The figures for the TS-GEM dataset use unweighted data. All countries that participated and contributed with data in the GMMP each year are included in the figures (no observations excluded).

Source: GMMP

To coordinate and collect data from 114+ countries is a massive undertaking, and though GMMP only monitors one day of news in five-year intervals, the data provided from some countries are still quite limited. Despite participating in the global survey, some countries lack data for all or some of the indicators tested in this study. This means that they will be "missing" in the statistical procedures. Although the results from GMMP's one-day survey have been validated in sev-

eral countries with more extensive data, there is always a risk that special events or circumstances happening in a country in a specific year will bias the data, a problem that is exacerbated when combined with small samples of news stories. To partly alleviate the problem, we decided to exclude countries with very limited data (less than 15 stories analysed) and extreme outliers based on limited data (odd values based on small samples) from the statistical analysis. From the outset, 15 country-year observations were excluded (2005: Suriname. 2010: Ireland, St Lucia, St Vincent, Togo. 2015: Chad, Haiti, Ethiopia, Lesotho, Niger, Solomon Islands, Saint Lucia, Gabon, Congo, Burkina Faso). However, due to the limitations of a one-day sample, only six were excluded, despite having data for all indicators in the final GEM-I (Burkina Faso, Congo, Lesotho, Solomon Islands, and Saint Lucia from 2015, and Togo from 2010). We also conducted several robustness tests to ensure that the measures are consistent and reliable, with and without the excluded observations (see further discussion later in this appendix).

The statistical analyses began by testing the frequencies and relationships of potential indicators available in the GMMP dataset. First, a larger set of indicators was included, looking at frequencies and correlations between them. To facilitate comparisons between years and countries, we primarily used the pooled TS-GEM dataset (Färdigh et al., 2020), which contains all the data from all GMMP studies conducted in 1995, 2000, 2005, 2010, and 2015. Data from the cross-sectional CS-GEM dataset, which includes the latest observation for each country with 2015 as the target year, was also used to compare the latest figures for each country. The following indicators of presence, topics, and roles in the news from the GMMP were identified as potential candidates for inclusion in the index:

Presence: Women's overall presence in the news.

- women news subjects or sources (all people in the news)
- women reporters (in all stories)

Topics: Women's presence in different news stories about different topics.

- women news subjects or sources in stories about economy and business
- women news subjects or sources in stories about politics and government
- women news subjects or sources in stories about crime and violence
- women news subjects or sources in stories about social and legal issues
- women news subjects or sources in stories about science and health
- women news subjects or sources in stories about celebrity, art, and sport
- women reporters in stories about politics and government
- women reporters in stories about business and economy
- women reporters in stories about social and legal issues
- women reporters in stories about crime and violence
- women reporters in stories about science and health

- women reporters in stories about celebrity, art, and sport

Roles: The function or capacity in which women appear in the news.

- spokespersons (speaks on behalf of another person, a group, or an organisation)
- experts (provides information, opinion, or comment based on specialist knowledge)
- personal experience (provides opinion or comment based on individual, personal experience)
- popular opinion (provides opinion of the "ordinary citizen", e.g., in a street interview, vox-pop)
- victim (portrayed as a victim of crime, disaster, war, violence, accident, discrimination, etc.)

The correlations between the indicators, including all roles and topics, are mostly positive, which means that countries that have many women in one role in the news tend to have more women overall. Still, the correlations between the reporter variables and news subject or sources variables are weak and sometimes not significant. This means that the presence of women as news subjects and reporters do not necessarily overlap empirically, despite being conceptually related.

This pattern is clear when we test the correlations with our core indicator, women news subjects or sources (see Table 2.2). The strongest correlations emerge with women news subjects or sources in business and economy, and politics and government, and with the roles of spokespersons and experts. The correlations with the various reporting roles are much weaker, but strongest for women reporters in all news stories. Departing from the correlational pattern, we identify five indicators (plus the core indicator) that are the most promising candidates for the index (cells shaded in medium blue in Table 2.2).

Step 3: Testing dimensionality with principal component analysis and Cronbach's alpha

The third step was to test how the indicators work together as an index, using standard statistical methods for estimating the quality of composite measures. A key purpose is to identify potentials for reduction of the number of indicators, to achieve the best and most parsimonious measure with as few indicators as possible. We used principal component analysis (PCA) to analyse whether our set of potential indicators contains one or several underlying dimensions (components), and we also applied a Cronbach's alpha test to evaluate the scale reliability (a way to gauge how closely related a set of items are as a group, or the internal consistency of a composite measure). First, we did the test with all potential indicators (see Table 2.3).

Table 2.2 *Correlations between women news subjects or sources (in all news stories) and other indicators (Pearson's r)*

	Women news subjects or sources (%)
Topics: Women news subjects or sources in different topics (%)	
business & economy	.688*** (400)
politics & government	.576*** (403)
crime & violence	.527*** (398)
social & legal	.518*** (399)
science & health	.451*** (387)
celebrity, art, & sport	.357*** (376)
Role: Women in different roles in the news (%)	
spokespersons	.715*** (279)
experts	.458*** (275)
personal experience	.398*** (255)
popular opinion	.339*** (208)
Reporters: Women reporters, total and in different topics (%)	
women reporters (all stories)	.207*** (408)
politics & government	.166** (398)
science & health	.132* (368)
business & economy	.115* (394)
social & legal	.077 (387)
crime & violence	.096# (386)

Comments: n = number of country-year observations (in parentheses; outliers with limited data are excluded – six country-year observations). #$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. The cells shaded in medium blue represent the indicators we included in the final GEM-I. All variables are from the GMMP study (1995, 2000, 2005, 2010, & 2015), and the variables range between 0 (no women) and 100 (all women). Women reporters in celebrity, art, and sport only had 32 country-year observations in the dataset and is not presented. The role indicators are only available in 2005, 2010, and 2015, which entails fewer observations (*n*-values) for these correlations overall.

Source: GMMP

Table 2.3 *Women in different roles and topics in the news (per cent), PCA analysis of eleven potential indicators*

	Component		
	1	2	3
News subjects or sources (all news & topics)	**.816**	.468	.170
Spokespersons	**.801**	.195	.328
Subjects or sources in business & economy news	**.711**	.008	.126
Subjects or sources in politics & government news	**.652**	.165	-.338
Subjects or sources in social & legal news	**.540**	.106	.196
Experts	**.430**	.159	.328
Subjects or sources in science & health news	**.429**	.285	.256
Subjects or sources in crime & violence news	.244	**.757**	.098
Personal experience role	.113	**.761**	.022
Subjects or sources in celebrity, art, & sport news	-.001	.187	**.781**
Reporters (all news & topics)	.390	-.259	**.470**
Per cent variance (extraction sums of squared loadings)	34.88	9.98	9.47
Per cent variance (rotation sums of squared loadings)	28.30	15.01	11.01

Comments: The medium blue shaded cells show the indicators finally selected for the GEM-I. The figures in bold show which of the three components the indicator associates most strongly with. Extraction method: PCA. Rotation method: Varimax with Kaiser normalisation. n = 228 country-year observations (outliers with limited data are excluded – six country-year observations). Cronbach's alpha = .726 (.789 with standardised items). All variables are from the GMMP study (2005, 2010, & 2015), and the variables range between 0 (no women) and 100 (all women).

Source: GMMP

Ideally, the PCA should only identify one dimension (component) among the included indicators to be used in a composite measure. The first PCA (Table 2.3), however, showed that there is indeed potential for reduction. First and foremost, the PCA identified three components in the data, not one. When we examine the strength of the association between each indicator and the three components, we find, as expected, the first component to be headed by our core indicator: women as news subjects or sources in all news stories. The spokesperson and expert role and most of the news topics (business and economy; politics and government; social and legal; and science and health) also display strongest associations with the first component. Women as news sources in crime and violence news and in the role of expressing personal experi-

ences form a second component. The third component is mainly composed by women as news sources in celebrity, art, and sport, and women reporters. The reporter indicator, however, is also associated with the first component (.390). A Cronbach's alpha test showed that the internal consistency of the measure is fairly good (.726), but also that a removal of women as subjects or sources in celebrity, art, and sport would improve the scale (index) significantly.

The results from the first PCA, in combination with the previous correlational analysis, support the overall theoretical and conceptual premises for the study. Together, they lead us to conclude that 1) women in crime and violence news and in the personal experience role measures something other than gender equality (possibly tabloidisation) and should not be included in the index, along with women in celebrity, art, and sports news; 2) the spokesperson and expert roles are the key role indicators to include; 3) business and economy, and politics and government, are more important news topics to include than social and legal, or science and health; and 4) the general presence of women reporters in the news is the best of all reporter variables to include in the index.

Altogether, we conclude that six indicators should be sufficient to capture the core dimension of gender equality in news content. Indeed, a second PCA with these six indicators resulted in a one-component, unidimensional solution (see Table 2.4). Here, women reporters have the weakest association (.355), as expected. The Cronbach's alpha is .681 (if the women reporters variable is removed from the index, Cronbach's alpha increases to .733), which is a bit low if the primary aim of a scale is internal consistency – but as discussed earlier, this is not the most important goal.

Table 2.4 *Women in different roles and topics in the news (per cent), PCA analysis with selected six indicators*

	Component 1
People in the news (all subjects or sources)	.905
Spokespersons	.782
Subjects or sources in economy & business news	.741
Subjects or sources in politics & government news	.726
Experts	.515
Reporters (all news)	.355
Per cent variance (extraction sums of squared loadings)	46.07
Per cent variance (rotation sums of squared loadings)	46.07

Comments: Extraction method: PCA. Rotation method: Varimax with Kaiser normalisation. n = 268 country-year observations. Cronbach's alpha = .681 (.742 with standardised items). All variables are from the GMMP study (2005, 2010, & 2015), and the variables range between 0 (no women) and 100 (all women). Outliers with limited data are excluded (six country-year observations).

Source: GMMP

Step 4: Robustness tests

The final step was to conduct several robustness tests and assessments of alternative versions of the index, to ensure that the six-indicator index is consistent and reliable (see Table 2.5).

The robustness tests included comparing the results of the original GEM-I with the following results: 1) when only countries with large samples (more than 50 news stories analysed) are included; 2) when a cross-sectional dataset (CS-GEM) that only contains the latest available observation for each country is used instead of the time-series dataset (TS-GEM); and 3) when we include the six outliers (countries excluded from the analysis due to having odd measures based on limited samples). In all tests, we got very similar results and very small differences with the original GEM-I. If anything, including the outliers accentuates the observed pattern rather than weakening the results.

Since the relationship between all the presence, topic, and role indicators is positive overall – meaning that a country that has many women in the news tends to have more women across the board – it is also worthwhile to test alternative versions of the index. Besides the core indicator (women as news subjects or sources), the spokespersons indicator is important since it also displays strong correlations with women news subjects in business and economy, and women news subjects in politics and government. Spokespersons thus seems to tap into the same dimension as the latter, which is logical since spokespersons for businesses, corporations, governments, and political parties are the main sources the news media turn to for interviews.

The statistical outcomes and the prominence of the spokespersons indicator encouraged us to test a version of the index with only four indicators, and one version with three (see Table 2.5). Of the alternatives tested, only the four-indicator version (GEM-I-4) was deemed sufficiently similar to the original GEM-I (Pearson's $r = .937$), although it yields somewhat higher scores. It follows the same process for calculation but uses a different formula (see Appendix 2.2 for further details on calculations).

The base GEM-I with six indicators is broadly applicable to all general news in newspapers, radio, and television – off- or online. The use of the GEM-I-4 could be relevant in situations where one wants to monitor other types of current affairs or specialised news, such as culture, entertainment, or sports, where politics and economy are not always part of the content. The GEM-I-4 thus has a broader applicability than the base index, but it does not account for topics, and it produces higher scores than the base GEM-I (see Table 2.5 and Figure 2.7).

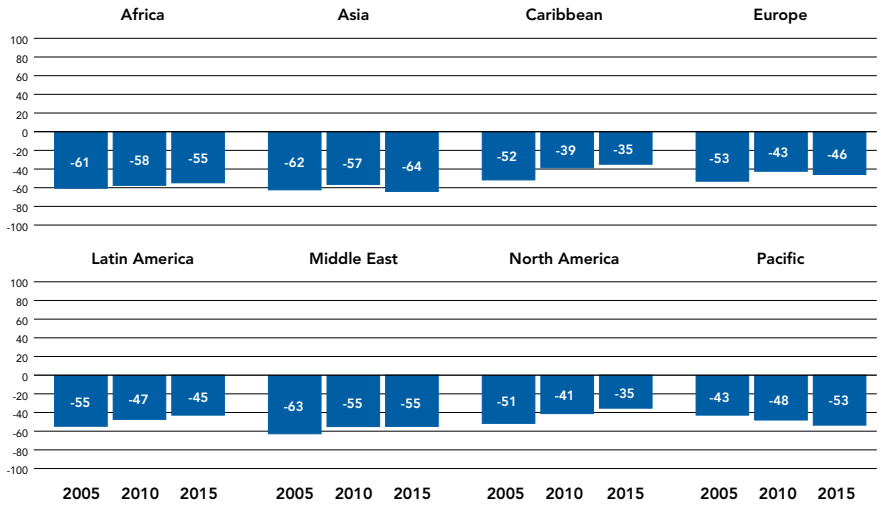
Table 2.5 *Three robustness tests (mean score and Pearson's r)*

	2005	2010	2015	TOT	Correlation with GEM-I-6
Robustness test 1: Alternative versions of the index (time series data)					
GEM-I-6	-61.1	-53.6	-53.2	-55.3	1.0
	(68)	(99)	(101)	(268)	(268)
GEM-I-3	-66.2	-57.4	-57.7	-59.9	.855***
	(72)	(100)	(103)	(275)	(268)
GEM-I-4	-56.6	-49.2	-48.8	-51.0	.937***
	(72)	(99)	(103)	(274)	(268)
Robustness test 2: Countries with 50+ news stories analysed (time series data)					
GEM-I-6	-60.5	-53.8	-53.0	-55.2	1.0
	(61)	(88)	(93)	(242)	(242)
GEM-I-3	-65.8	-57.7	-57.7	-59.8	.878***
	(64)	(89)	(93)	(246)	(242)
GEM-I-4	-56.7	-49.8	-48.9	-51.2	.943***
	(64)	(88)	(93)	(245)	(242)
Robustness test 3: Cross-sectional data (2015 target year)					
GEM-I-6				-54.0	1.0
				(123)	(123)
GEM-I-3				-59.1	.854***
				(128)	(123)
GEM-I-4				-49.7	.901***
				(128)	(123)

Comments: n = country-year observations (in parentheses; outliers with limited data are excluded – six country-year observations). GEM-I-6 is the original GEM-I with six indicators. GEM-I-3 includes three indicators (news subjects or sources; spokespersons; experts). GEM-I-4 includes four indicators (news subjects or sources; reporters; spokespersons; experts). The TS-GEM dataset (Färdigh et al., 2020) was used for all statistics, except for robustness test 3, which used the cross-sectional CS-GEM dataset. The GEM-I is based on the mean of six gender-sensitive news indicators for each country and year and varies between -100 (all men for all six indicators) and +100 (all women for all six indicators). A score of zero (0) equals full gender parity across the indicators. All variables are from the GMMP study (2005, 2010, & 2015). Correlations = Pearson's *r*. The cross-sectional data (CS-GEM) uses the latest available measure for each country, with 2015 as the target year. This means that most data are from 2015. If 2015 is unavailable, the next available year is included (2010 for GMMP).

Source: GMMP

Figure 2.7 *GEM-I-4 by region, 2005–2015 (mean score)*



Comments: n = number of country-year observations for each year (64 from 2005; 88 from 2010; 93 from 2015; outliers with limited data are excluded – six country-year observations). The GEM-I-4 is based on the mean of four gender-sensitive news indicators (news subjects or sources; reporters; spokespersons; experts) for each country and year and varies between -100 (all men for all four indicators) and +100 (all women for all four indicators). A score of zero (0) equals full gender parity across the indicators. The global mean for all countries and years is -51.0. All variables are from the GMMP study (2005, 2010, & 2015).

Source: GMMP

A final test was to examine the relationship of the different potential indicators with gender equality in society (see Table 2.6). Whether gender equality in the news is de facto related to the level of gender equality in society is an empirical question and explored in great detail in Chapter 4. Still, if we, in the process of selecting the indicators for the GEM-I, find that one potential candidate is unrelated or even negatively associated with gender equality in society, it will give us a sign of a potentially problematic choice. As emphasised earlier, a parade of women in the news is not always a sign of equality. The comparison corroborates the choice of the six indicators for the GEM-I, as the excluded indicators in the broader set are unrelated or only weakly correlated with the Global Gender Gap Index (GGI). GGI is published by World Economic Forum (WEF) and is a widely used measure of gender parity across countries in the world.

Table 2.6 *Correlations between the gender-sensitive news indicators and the Global Gender Gap Index (Pearson's r)*

	GGI
Presence: Women (%)	
news subjects or sources	.388*** (243)
reporters	.203** (243)
Topics: Women news subjects or sources in different topics (%)	
politics & government	.404*** (240)
business & economy	.311*** (239)
science & health	.235*** (235)
social & legal	.184** (240)
crime & violence	.158* (236)
celebrity, art, & sport	-.005 (227)
Role: Women news subjects or sources in different roles (%)	
spokespersons	.417*** (241)
experts	.207** (238)
personal experience	.255*** (225)
popular opinion	.041 (184)
Reporting: Women reporters in different topics (%)	
crime & violence	.175** (231)
politics & government	.147* (239)
business & economy	.137* (238)
social & legal	.076 (236)

Comments: n = number of country-year observations (in parentheses; outliers with limited data are excluded – six country-year observations). $*p < .05$, $**p < .01$, $***p < .001$. Pearson's *r*. The medium blue shaded cells represent the indicators included in the GEM-I. All variables are from the GMMP study (2005, 2010, & 2015), and the variables range between 0 (no women) and 100 (all women). The GGI variable ranges between 0 (no equality) and 1 (full equality between women and men). Since the GGI was first published in 2006, the measures for GEM-I/GMMP 2005 are matched to GGI for 2006 when computing the correlations.

Source: GMMP

Appendix 2.2 A practical guide to measuring the GEM-I

The GEM-I is a composite index of six indicators measuring how women and men appear in the news regarding presence, topics, and roles. This section presents a practical guide on how to code and calculate the GEM-I, based on the coding scheme (available from the GMMP website) compiled by the GMMP (see summary below).

Women			Men	
Count	%	Gender-sensitive indicator	%	Count
		Presence		
		1. People in the news: News subjects or sources		
		2. Reporters		
		Topics		
		3. News subjects or sources in business & economy		
		4. News subjects or sources in politics & government		
		Roles		
		5. Spokespersons		
		6. Experts		
	Sum %		Sum %	
	Mean %	GEM-I (mean % women – mean % men)	Mean %	

- Step 1 (count): Count the number of women and men appearing in all the new stories as 1) news subjects or sources, 2) reporters, 3) news subjects or sources in news about politics and government, 4) news subjects or sources in news about business and economy, 5) spokespersons, and 6) experts.

- Step 2 (%): Calculate the percentage of women and men for each indicator.
- Step 3 (sum %): Calculate the sum of the percentages for women and men, respectively, for all six indicators.
- Step 4 (mean %): Calculate the mean percentages for women and men, respectively, by dividing the sum by 6.
- Step 5 (GEM-I): Calculate the GEM-I score by subtracting the men's mean from the women's mean: (mean % women – mean % men). The final GEM-I can range between -100 (all men) and +100 (all women). Zero (0) equals full gender parity across the indicators.

Remember, the GEM-I is broadly applicable to all general news in newspapers, radio, and television – off- or online. It is also possible to calculate the GEM-I by using only four of the indicators (people in the news, reporters, experts, and spokespersons). Follow the same process but use the following formula:

((% women news subjects or sources + % women reporters + % women experts + % women spokespersons) / 4) – ((% men news subjects or sources + % men reporters + % men experts + % men spokespersons) / 4).

The GEM-I-4 is particularly relevant if you want to apply the index to other types of current affairs or specialised news – such as culture, entertainment, or sports – where politics and economy are not always part of the content. The GEM-I-4 thus has a broader applicability than the base index GEM-I, but it yields somewhat higher scores. If you want to calculate an index derived from the gender ratio (GEM-GGI) instead of the gender balance (GEM-I) in the news use the following formula: (mean % women / mean % men). The GEM-GGI ranges between 0 (no gender parity) and 1 (full gender parity) and is measured on the same scale as the well-known Global Gender Gap Index and Gender Inequality Index (however, the GII is reversed so that 0 = no inequality and 1 = inequality).

Summary of coding principles and definitions from the 2015 GMMP coding guide

First, you need to decide on the sample: which types of news media and outlets to include and which period to study. The GMMP monitors a range of news media in each country published on a single day, but you could decide to monitor a longer period or study only one news outlet.

1. What to code

- Newspapers: Code 12–14 stories on the main news pages of each newspaper. Begin with the main news page (usually page 1); code all the news

stories on this page. Then, go to the next major news page; code regular news stories only. If a story begins on one page and continues elsewhere, code the entire story. Some news items consist of a photograph with a headline, caption, or short text; code these just like longer stories.

Do not code: editorials, commentaries, or letters to the editor; story listings (a listing on the front page of some newspapers that shows the stories that will appear on the inside pages); or cartoons and jokes.

- Radio and television: Code all the stories in the newscasts that you selected, including: all types of news (politics, local stories, international stories, reports on education, medicine, business, entertainment, etc.); sports reports (code *only* if they are part of the newscast; do *not* code a programme if it is entirely about sports); and weather forecasts and reports (code *only* if they are part of the newscast).

  Do not code: introductions or "headlines" (some programmes begin with brief clips from stories that will appear later in the newscast); news features that follow the newscast; scrolling news text on television; or advertising. Do not code weather reports or programmes that are completely separate from the newscast.

- Online news: Code 12–14 stories or online news content items with links on the home page. The home page usually has "teasers", that is, descriptions or short excerpts of news stories with hyperlinked text. The home page is the "first layer" of the website. The hyperlinks, when clicked, open up a second page with the entire story – this is the "second layer" of the website. Sometimes, next to the story in the second layer there are accompanying features such as audio or video clips. Clicking on the features leads you to the "third layer" of the website. Do not code beyond the third layer of the website.

  Do not code: editorials, commentaries, or readers' feedback; story listings; cartoons and jokes; weather reports (though you *should* code stories *about* the weather); advertising; or YouTube videos.

2. Coding presence

The overall presence of women and men in the news is measured by two indicators: people in the news and reporters.

- People in the news (news subjects or sources): Code *any* person whom the story is about, even if they are not interviewed or quoted, as well as each person in the story who is interviewed. For newspapers, include each person in the story who is quoted, either directly or indirectly. (A person is

quoted directly if their own words are printed in the story, and a person is quoted indirectly if their words are paraphrased or summarised.) For radio and television, code each person in the story who speaks and any person whom the story is about, even if they do not speak. Persons may be inside or outside the studio. Code only *individual* people.

Do not code: groups (e.g., a group of nurses or a group of soldiers); organisations, companies, or collectives (e.g., political parties); characters in novels or movies (unless the story is *about* them); deceased historical figures (unless the story is *about* them); people who are simply mentioned or listed in the story (unless the story is *about* them); or interpreters in radio or television (code the person being interviewed as if they spoke without an interpreter).

- Reporters: For each newspaper story, code each journalist or reporter who wrote the story and whose name appears. Do not code unnamed journalists (e.g., "staff reporter" or "our correspondent") or news agencies. For radio and television, code each reporter. Include reporters who do not appear on screen, but whose voice is heard (e.g., as voice-over). Do not code news anchors or presenters.

3. Coding topics

How women's and men's voices are represented in the news about politics and government, and economy and business, respectively, is measured by looking specifically at the people in the news in these two topics.

- News subjects or sources in politics and government: Code all people in the news (see above) in stories about politics and government, including: peace, negotiations, treaties, and so forth (local, regional, national); other domestic politics and government (local, regional, national), elections, speeches, and the political process; women politicians and women electoral candidates; global partnerships (international trade and finance systems, e.g., WTO, IMF, World Bank, debt); foreign and international politics, relations with other countries, negotiations, treaties, UN peacekeeping, national defence, military spending, military training, military parades, and internal security; and other stories on politics and government.
- News subjects or sources in economy and business: Code all people in the news (see above) in stories about economy and business, including: economic policies, strategies, modules, indicators, stock markets, and taxes; economic crisis, state bailouts of companies, and company takeovers and mergers, poverty, housing, social welfare, and aid to those in need; women's participation in economic processes (informal work, paid employment, unemployment, unpaid labour); employment; informal work

and street vending; other labour issues, strikes, trade unions, negotiations, and other employment and unemployment; rural economy, agriculture, farming practices, agricultural policy, and land rights; consumer issues, consumer protection, regulation, prices, and consumer fraud; transport, traffic, and roads; and other stories on the economy.

4. Coding roles

Role refers to which capacity or function women and men are included in the news stories, and it is measured by two indicators: spokespersons and experts.

- Spokespersons: This indicator focuses on the function or capacity in which a person is included in the story. Code all individuals in the story that function as spokesperson. A spokesperson represents, or speaks on behalf of, another person, a group, or an organisation. Code all spokespersons, even if there are several in the same story.
- Experts: This indicator focuses on the function or capacity in which a person is included in the story. Code all individuals in the story that function as commentator or expert. The person functions as expert or commentator if he or she provides additional information, opinion, or comment based on specialist knowledge or expertise. Code all experts, even if there are several in the same story.

Appendix 2.3 Additional table

Table 2.7 *Gender equality in the news (GEM-I), predicted by time and region*

	Model 1 time	Model 2 time & region	Model 3 time & country
Time (2005 = 0)	0.734*** (0.176)	0.697*** (0.167)	0.772*** (0.182)
Region (reference category = Africa)			
Asia		-0.783 (2.673)	
Middle East		2.010 (3.919)	
Pacific		9.584** (3.006)	
Latin America		11.794*** (2.491)	
Europe		11.968*** (2.775)	
Caribbean		13.650*** (3.250)	
North America		19.301*** (4.838)	
Country-dummies	no	no	yes
Constant	-59.464*** (1.200)	-66.560*** (1.950)	-65.504*** (10.123)
n	268	268	268
R^2	.042***	.238***	.497***

Comments: $n = 268$ country-year observations (outliers with limited data are excluded – six country-year observations). $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$. OLS regression, unstandardised *b*-coefficients, standard errors in parentheses. Models 1 and 2 use clustered robust standard errors (cluster = country, 133 clusters). Model 3 uses country-dummies. The variables included in the GEM-I are from the GMMP study (2005, 2010, & 2015), and the variables range between -100 (all men) and +100 (all women). 0 = full gender parity. Time = year (2005 = 0; 2010 = 5; 2015 = 10). Based on the average progress 2005–2015, it will take more than 70 years to reach full gender equality; to move from -53 (global mean score, 2015) to 0 on the GEM-I will take 72.2 years if the rate of change is 0.734 per year.

Source: GMMP

The project Comparing Gender and Media Equality across the Globe has been funded by the Swedish Research Council (2016–2020) and is based at the Department of Journalism, Media and Communication (JMG) at the University of Gothenburg, Sweden. The GEM dataset and its codebook are free to use and can be downloaded in various formats. For access, contact JMG. Please ensure that proper attribution is given when citing the dataset.