

Who cites whom? The overrepresentation of male sources in the most shared climate change news stories

Asta Zelenkauskaitė*¹ , Gintarė Gulevičiūtė², Monika Mačiulienė³,
Aelita Skaržauskienė⁴ & Aistė Diržytė⁵

*corresponding author

1. Mykolas Romeris University, Vilnius, Lithuania, az358@drexel.edu
2. Mykolas Romeris University, Vilnius, Lithuania, gintare.guleviciute@mruni.eu
3. Mykolas Romeris University, Vilnius, Lithuania, maciuliene@mruni.eu
4. Mykolas Romeris University, Vilnius, Lithuania, aelita@mruni.eu
5. Mykolas Romeris University, Vilnius, Lithuania, aiste.dirzyte@mruni.eu

Abstract

While journalists work tirelessly to identify relevant, credible, and diverse sources to support the news stories they cover, not everyone is equally heard. This study examines gender gaps in sourcing on the Lithuanian national broadcaster LRT. It in the most popular news stories that cover climate change. It analyzes national or international coverage, institutional backing, and type of testimony (prestige, expert, lay) by cross-tabulating these results with the gender of the reporter. Results show that sourcing is still predominantly male, with female sources making up only a third. Male journalists largely cite male sources, while females cite both genders. Male sources are mainly prestige testimonies, whereas female sources present lay testimonies. We contextualize this study within the framework of gender mainstreaming efforts, previously advocated for in climate change research.

Keywords

reporter gender, source gender, news sourcing, climate change coverage, Lithuania

Introduction

As the frequency and intensity of climate change events escalate globally, and as science is exploited and politicized (Schmid-Petri, 2017), there is a pressing need to keep it on the global agenda (Lieven, 2020). News organizations provide content for the public and journalists fulfill an increasingly critical role in covering climate change by providing not only timely responses to recurring events but also accurate reporting to inform the public about ongoing environmental crises. News organizations have typically served an important role in agenda-setting of the most pressing issues, and by informing the public, created spaces for public opinion fora (Coleman et al., 2009). Public opinion fora, in turn, offer an important condition for policy enforcement regarding climate change (Malinauskaitė et al., 2022; Schreurs & Tiberghien, 2010). The journalistic role entails identifying relevant, credible, and diverse sources to support the news stories covered.

In this study, we consider diverse sources in relation to gender representation, as recommended by Arora-Jonsson (2014). When it comes to sources, surveys of journalists in the major European news outlets indicate that climate change reporting relies on scientific experts, with a focus on educating the public through a broad range of journalists (Strauss et al., 2024). This study investigates how journalists represent sources and who cites whom in climate change coverage in the Lithuanian context.

For journalists, sourcing is about finding and choosing specific sources over others. Sources serve as supporting materials for a given news story while benefitting from visibility and reaching wide audiences. Fundamentally, in journalistic practice, sourcing can be viewed as featuring elements of visibility or lacking them (Coddington & Molyneux, 2023). Thus, sourcing is a choice that journalists make, and not everyone has an equal chance of being selected by the news media.

What is referenced by whom, and how, matters due to its societal impact as a form of representation (Thomson et al., 2023). Sources, as supporting materials, serve to represent institutional ideologies (Atton & Wickenden 2005). Source representation matters and can be linked to trust in media, because sources serve as building blocks of credibility in news stories, and they can contribute to trust in the media's ability to represent reality (Coddington & Molyneux, 2023). Climate change is no exception.

There is a growing body of literature that considers gender to be an integral feature of social transformations associated with climate change, and yet, there is still a need to connect interdisciplinary strands of research that focus on climate change and gendered knowledge with social studies of climate action in practice (Pearse, 2017). This study broadly contributes to the literature on gender relations in climate change with the assumption that such gender relations are integral to social transformations when it comes to responsibility, governance, and social action (Pearse, 2017). This social transformation acknowledges the gendered nature of climate impacts and adaptations and is conceptualized here as: "multidimensional and reflective of gender relations in particular socioeconomic and cultural contexts" (Pearse, 2017, para. 1). These elements are part

of the initiatives of *gender mainstreaming*, a term coined to reflect gender perspectives and attention to gender equality as central to all activities in climate governance (Arora-Jonsson, 2014).

Building on research that links reporter gender to source selection (Armstrong, 2004; Zeldes et al., 2012), we ask whether this dynamic applies to climate change coverage. Broadly, in this study we ask: Does reporter gender impact their sourcing practices in news stories that contain references to climate change? And when sourced, what types of sources are used within different topics related to climate change? We aim at better understanding how climate change is presented to various actors through legacy news media, as media portrayals not only inform about climate change but also serve as institutional reproductions of hegemony (Dispensa & Brulle, 2003).

Literature review

As a loop between audiences and journalists (Scheufele, 1999), news media provide an interpretative lens for sense-making of the world around us through discursive framing (Tannen, 1993). Mass media play a central role in forming and legitimizing discourses on climate change (Brüggemann & Engesser, 2017). The landscape of climate change journalism has been shaped by various forces in recent years, and climate change journalists have diversified, shifting from “gatekeepers” to “curators”, especially with the rise of online media outlets that demand fast-paced news production (Schäfer & Painter, 2021). Fast news production makes journalists move in the direction of newsfluencers, where news is produced in a platformized, precarious, and participatory context (Hurcombe, 2024). Journalists are increasingly expected to diversify themselves by curating content, i.e., by gathering, organizing, and presenting information from a variety of sources (Hurcombe, 2024). Such shifts also reflect organizational changes in climate change news contexts, such as the scarcity in climate change – designated reporters, on the one hand, and the rise of online specialized venues, on the other. These new roles highlight the complexity and evolving nature of journalism and its impacts and new pressures on climate change coverage, as argued by Schäfer and Painter (2021).

Media priming and gatekeeping

While news media shape how climate change is covered, climate change is just one of many topics addressed by media. Thus, news stories compete for prominence and attention. Each news story undergoes the process of gatekeeping – where the editor-in-chief selects the stories to be featured in the next issue. And while the process of gatekeeping has evolved over time from a single editor-in-chief to a group of producers who make such decisions, not all news stories can still be selected for broadcast or print (Shoemaker & Vos, 2009). Climate change coverage is no exception – and how it is categorized by the news organizations becomes a matter of its prominence.

Gatekeeping climate change content is also a responsibility, since media plays a significant role in shaping public perception and policy responses to climate change (Feldman & Hart, 2018; Fox & Rau, 2017). By improving how sources are incorporated, news media can better inform the public and support meaningful climate action, as studies have shown that media often give undue visibility to climate change deniers, which skews public understanding and hampers effective climate action (Petersen et al., 2019).

Climate change sourcing has been shown to exhibit challenges in diversity due to the narrow range of topics included by journalists. For example, a meta-analysis of the scientific articles cited in climate change news revealed that they are typically sourced from two dominant fields: natural science and health. As a result, such sourcing choices led to media selectivity that reduces climate change research to a watchdog and thus lacks a focus on social, economic, technological, and energy aspects and short-term processes and solutions (Perga et al., 2023).

Gender and climate change sourcing

Regardless of the aspirational benefits of the importance of diverse sources based on gender, there are gaps in current gender representation in sourcing. Studies have documented gendered use of sources in news production. For example, a gender gap has been observed in journalism sourcing around the globe in both traditional media (Desmond & Danilewicz, 2010; Jürgens et al., 2022) and online newspapers (Mateos de Cabo et al., 2014). In Northern Europe, a gender gap in the use of experts has been reported in Finnish news media (Niemi & Pitkänen, 2017), but it is also seen in the Global South, where women experts are excluded in the Chilean press (Vernal-Vilicic & Reyes-Betanzo, 2024). An analysis of Australian news stories broadcast revealed that, regardless of the reporter's gender, male sources were more likely to be included as experts (Cann & Mohr, 2001).

The question of who cites whom is related to networks and representation. Research shows that the gender of the reporter can impact sourcing, where the reporters' gender was found to be linked to the source's gender in both the newspaper context (Armstrong, 2004) and broadcast (Zeldes et al., 2012). Thus, we ask whether the gender of the reporter does make a difference in regard to which sources are featured in reporting on climate change.

Gender representation in sourcing matters because having a voice in public may translate to access to both actual and symbolic power (Niemi & Pitkänen, 2017). Individuals who are granted roles of opinion leadership and authority in terms of framing policies, pointing out problems, and suggesting solutions in public may not only influence the direction of the debate but also decision-making processes and, ultimately, policy outcomes.

Similarly, the need for gender representation through sourcing in climate change can be reflected through the notion that gendered vulnerabilities in climate change are tightly interlinked with other social relations and hierarchies, where women are still lagging in

government-body representation (Hemmati & Röhr, 2009). When it comes to the specific analyzed context of Lithuania, it ranked 17th in the Gender Equality Index for the EU in 2023 (EIGE, 2023). Thus, even if gender equality is a fundamental value of the European Union (EU), which Lithuania is part of, as stated in its policy documents, it is still lagging in gender equality. News organizations can play a critical role in diminishing barriers to representation of women through sourcing in climate change contexts.

Benefits in sourcing diversity in terms of gender

Regardless of the challenges that still linger in connection with gender inequality as evidenced in news reporting, including online spaces (Mateos de Cabo et al., 2014; Mulupi & Zirugo, 2023; Niemi & Pitkänen, 2017; Vernal-Vilicic & Reyes-Betanzo, 2024; Wheatley et al., 2024), and gender inequality in Lithuania (EIGE, 2023), there is a range of benefits to including a diverse representation in climate change source coverage. First, including balanced representation of experts enhances the credibility of news reporting, as diverse voices increase audience trust (Zerback & Schneiders, 2024). Second, media coverage influences public opinion and policy decisions, and balanced representation ensures policies are informed by a wide range of expertise, necessary for addressing the multifaceted challenges of climate change (UN Women, 2021). Diverse representation in media can lead to higher engagement, as audiences connect with content that reflects a broad spectrum of experiences and identities, leading to greater awareness and action on climate issues (Wibeck, 2014).

Third, gender diversity brings a range of perspectives and approaches to problem-solving (Kakabadse et al., 2015). Women and men often have different experiences and viewpoints, enriching the discourse on climate issues and leading to more comprehensive solutions. For instance, women in many communities are on the frontline of climate change impacts and can provide insights into adaptive practices and local resilience strategies (Singh et al., 2018). Finally, ensuring equal gender representation is a matter of equity and inclusion, recognizing the contributions of women in science and policy who have historically been underrepresented in media (Global Media Monitoring Project, 2021).

Climate change reporting: gender and geographic variation in reporting

Geographic or relevance-based proximity matters in climate change reporting in several ways. Topics that are chosen can differ by relevance to their audience due to the perception of distance. Climate change relevance can function with the same logic – how we perceive the imminence of a threat or the solution to climate change issues depends on how imminent we see it happening to us. For example, in the analysis of wildfires, it was found that respondents deemed that the climate change issue has become more prominent after severe domestic wildfires (Berglez & Lidskog, 2019) – thus, foreign or domestic proximity and cultural factors in climate change reporting matter. Similarly, when it comes to the frequency of reporting climate change events, research shows that when,

for example, heatwaves and wildfire seasons occurred, climate change–related issues were more frequently reported in association with these events, even if there was variability in how news outlets interpreted these events (Hopke, 2020). Similarly, the question is who is represented as sources to create proximity-based relevance.

Sourcing appeals: prestige, expert, and lay

Sources are supporting materials, and testimonies allow journalists to create meaningful rhetorical appeals to audiences regarding the given content of the story. Sourcing such testimonies is a judgement that journalists must make. Diversity of sources is one of the key pillars of journalism (Hansen, 1991). How is diversity seen in science communication coverage where the expert group might be limited? How do journalists incorporate more voices and types of evidence? Past research shows that elites, males, and non-minorities dominate as sources in journalistic practices (Kurpius, 2002).

Yet, at the same time, when it comes to the legitimization of climate change stories, the debate surrounding experts' voices is still prominent. When interviewing climate scientists, climate journalists, and citizens, scholars found that scientific experts are perceived as highly legitimate, but this perception is mostly confined to their own narrow circles. Experiential knowledge is seen as more useful in applied domains of science. However, in the new media landscape, journalists are still generally preferred as gatekeepers by all three actor types (Nicolaisen, 2024). In light of these findings, we aimed to analyze the degree and the types of testimony prevalent in Lithuanian climate change news coverage. We conceptualized sourcing into three subcategories based on classical rhetorical appeals – lay, prestige, and expert testimonies – which can be used to construct proofs that support an Aristotelian rhetorical argument (Mikalsen, 2010). Typically, journalistic practices around climate change sourcing have relied on expert or elite voices, which has sparked calls for a greater representation of lay sources (Atton & Wickenden, 2005). We aimed at analyzing how prestige, expert, and lay testimonies are used to address climate change and how it pertains to gender representation in sourcing.

Climate change research in the context of Lithuania

This study focused on the sourcing of climate change news in Lithuania. Lithuania is part of the European Union, which is leading in climate change mitigation efforts with 88% of Europeans believing that protecting the environment should be a priority for the EU (Schreurs & Tiberghien, 2010).

Given the interest in climate change mitigation, a meta-analysis of media representations in the climate change research field shows that research predominantly focuses on the Western European countries and print media (Schäfer & Schlichting, 2016). As such, this limited previous research on Lithuania highlights a gap in the literature. The Lithuanian case of climate change coverage in the news has so far mostly focused on environmental and technogenic risks, i.e., socially constructed risks arising from human

technological activity (nuclear plant accidents, air pollution, toxic contamination, etc.) that are most often framed as political, economic, or health-related issues rather than environmental ones (Telešienė, 2009; Telešienė et al., 2011). For example, a comparison of climate change coverage in Lithuania between online and print versions of legacy news media found that the online version had a stronger tone, but both focused on the political framing of climate change (Jančevskaitė & Telešienė, 2013). Climate change has been analyzed based on topic coverage (Rabiz et al., 2021) and from the perspective of discourse in climate change news coverage, showing that climate change is contextualized internationally, while geopolitics is more important at the national level (Pilibaitytė, 2011). Additionally, issues that were covered ranged from climate change mitigation in the EU or Lithuanian households (Streimikiene et al., 2020; Simanaviciene et al., 2014) and climate change denial, to disinformation and misinterpretation online (Kažys, 2016, 2018).

Research on source representation in climate change is rather limited, thus we draw expectations from other fields, e.g., women in science. Lithuania ranks third in Europe with 51% of women in science, as reported by UNESCO (2019). Additionally, Lithuania ranks high in women contributors to Wikipedia, leading among European countries (Massa & Zelenkauskaitė, 2014). Our expectations of equal representation of source by gender are based on the assumption that research shows audiences do not experience bias toward the gender of the source (Greve-Poulsen et al., 2023). To address the gap in sourcing types within the Lithuanian context, we pose the following research questions:

RQ1: What proportion of the most popular climate change stories includes citations from female sources, considering: a) proximity (national or international), b) types of sourcing, and c) types of institutions?

RQ2: What is the effect of the reporter's gender on the gender representation of sources and the news category?

Method

Data

This study is an analysis of the text-based online version of the news archives from the news broadcasting channel LRT.lt, which is the national broadcaster in Lithuania. LRT.lt is not only on par with commercial broadcasts in terms of popularity, but it also uniquely positioned to embody the mission of representing the public interest. References to “climate change” in the title and/or the body of the text qualified for inclusion in the sample. Based on this, we collected 240 news stories (top 5%) from the ranked search of “the most popular” news stories category out of the total of 4,683 archival stories on the climate change topic by November 2023. The most popular category, based on our observation, is constructed by LRT.lt based on ranking audience preferences, such as shares, i.e., the number of times audiences shared the story on social media (e.g., Facebook). Thus,

the logic behind selecting “the most popular” category is based on the audiences’ perspectives. These are the most visible news stories to the largest audiences and flagged by them, thus, having the highest reach and potentially the highest societal impact. We aimed to analyze such high-impact phenomena.

An archival search of “climate change”, which retrieved data in a reversed chronological order and resulted in a dataset covering 2019–2023, showed increasing amounts of returned data in recent years (2019 = 11%; 2020 = 15%; 2021 = 24%; 2022 = 27%; 2023 = 23%). The data for 2023 did not represent the entire year, as the query started in November 2023. One news story from 2015 was included as an outlier from a temporal perspective.

We want to highlight that for the archival search, we used the phrase “climate change” as a search term, as this is the phrase most frequently used by Lithuanian news portals to address the issue (as seen from the extensive archival records of the news stories, $N = 4,683$, returned by the search keywords). It is worth noting that news cultures around the world adopt different ways of labeling the urgency of climate change. For example, *The Guardian* adopted the phrase “climate emergency” to signal the imminent threat associated with it (Feldman & Hart, 2021), and in Norway, the “the green shift” is used (Ytterstad & Bødker, 2022).

Analytical approaches

We employed a manual content analysis to code the articles based on a range of variables. The majority of the variables were manifest: the news story category was extracted from the web page as defined by the news portal; reporter information was taken from the website, as each news story had an author listed; and sources were extracted by identifying adjacent content to the search of “climate change” references anywhere in the text. Gender identification of sources and journalists (authors) was based on the grammatical gender implied by the names (given that the Lithuanian language uses grammatical gender markers reflected in first and last names). Other categories that we coded were more of a latent nature (e.g., source testimony type and source institution); these were manually coded by two independent coders, achieving an acceptable intercoder reliability of 86% agreement using Cohen Kappa. Specific variable descriptions are provided below. We present descriptive statistics in tables, and we employed χ^2 tests to analyze nominal data obtained in the sample. We used z-scores (reflected through standardized residuals) to assess the statistical differences of given counts based on observed and expected values, as in Garcia-Perez and Nunez-Anton (2003).

Variables

To address RQ1 – What proportion of the most popular climate change stories includes citations from female sources, considering: a) proximity (nationally and internationally), b)

types of sourcing, and c) types of institutions? – we coded manifest variables (which were coded by one coder). We identified the following groups:

- Male: grammatical gender reference or a specific name.
- Female: grammatical gender reference or a specific name.
- Mixed: when a combination male(s) and female(s) were mentioned; when generic references to mixed groups were mentioned without identification; when no specific gender was mentioned, e.g., politicians, locals, teachers, fishers, or retirees.
- None: when no source was identified.

The gender of the reporter was determined based on grammatical gender as well. If more than one gender was present, the category was labeled as mixed; when institution was mentioned instead (e.g., LRT.lt), it was coded as institution. Male and Female were coded based on grammatical gender reference or a specific name, and News Organization when LRT.lt or other news agencies were mentioned.

Geographic proximity was categorized into three groups: Lithuania, the European Union (EU), and the World. These categories were determined based on the primary focus of the news story, as identified by reading the title and first paragraph. References to specific places and people were considered in this assessment. We distinguished between the EU and the rest of the World to account for policy or political discussions and the leaders that might be differently relevant based on proximity to Lithuania. Stories not specifically focused on Lithuania or the EU were labeled as “the World”.

The source institution variable was operationalized as follows. When present, the source institution was coded along with the name of the source. The institutions served as credentials and were categorized as follows: Official academic references to academic institutions explicitly mentioned (e.g., university or a professor); Official non-academic included references to non-academic institutions, typically government-related (e.g., Ministry of Health); Non-official included references to other types of institutions; No institution was labeled when there was no reference to institutions.

Testimony types were coded as follows: Prestige testimony included public figures (e.g., politicians, celebrities, agency directors) who, despite lacking expertise in climate change, have a representational role and public visibility. Expert testimony included individuals with expertise in climate topics such as professor, director of the climate center, doctor, climatologist, and specialist who can speak on the subject based on their academic expertise and professional training. Lay testimonies included quotes from regular people, referred to as neighbors and activists who are not trained in climate change topics but have a say or context in which they were interviewed. None was coded when no testimony was present. Two coders coded all these variables.

To address RQ2 – What is the effect of the reporter’s gender on the gender representation of sources and the news category? – we coded the author of the news story based on the perceived grammatical gender: male and female. The coding scheme included

the following: If one or more reporters were of the same grammatical gender, they were labeled as “male” or “female”. If mixed, they were labeled as “mixed gender”. If only an institution was mentioned, it was labeled as “institution”. Additionally, news content categories were used as presented in the news portal and were labeled accordingly (e.g., “Opinions”, “Breaking news”).

Results

Descriptive analysis of the sample

To contextualize the sample, the news stories analyzed were shared on average 580 times (mean), with a standard deviation of 740, with the minimum of 0 and maximum of 5,071 shares.

For RQ1, we created a descriptive analysis showing differences in gender distribution by identifying the breakdown of sourcing based on a) gender, b) national and international representation, c) types of sourcing, and d) types of institutions.

For RQ2, we created a descriptive breakdown of the reporter gender and the source gender. In addition, we analyzed the types of stories and the gender of the reporter.

Gender of the sources

To address RQ1, we first counted female sources and compared them with other sources. Results showed that female sources were used in less than one third of the cases ($n = 68$, or 28.3%), while male sources accounted for approximately half of the sources ($n = 133$, or 55.4%). Mixed gender comprised 5.8% ($n = 14$), and 10.4% ($n = 25$) of the stories did not contain a source related to climate change.

National vs. international breakdown of sourcing by gender

To address the national and international breakdown of the news coverage of climate change topics, we observed the following pattern of sourcing based on gender.

Source gender	Female	Male	Mixed	None	total
World	35	63	8	18	124
Lithuania	28	58	4	3	93
EU	5	12	2	4	23
Total	68	133	14	25	240

Table 1. National and international breakdown of the news coverage based on source gender.

Table 1 shows that female sources are lower across categories, regardless of whether the sourcing is regional or international. However, their representation is slightly better in

world news compared to national (Lithuanian) news stories. Male sources showed higher counts in the world news, Lithuanian news, and news on the EU. When no sources were found in the story, these stories were mostly focused on world news. However, an χ^2 test for significance did not show statistically significant differences when comparing all groups. It is worth mentioning that the overall sample featured stories that covered “World” ($n = 124$), and Lithuania was also prominently featured ($n = 93$).

Gender and institutional positioning

We aimed at identifying whether female and male sources had similar credential expectations. Descriptive statistics show that female sources were equally represented with academic and non-academic credentials. However, male sources were sourced twice as frequently from non-academic institutions, compared to academic ones, as noted in Table 2. Further χ^2 analysis at $p < .001$ level showed that male non-academic sources were statistically significantly higher than expected based on the z-scores.

Source Institution/ Source gender	Source Institution	Academic	Non- academic	Other	No institution	Total
Female	0	16	19	9	24	68
Male	0	30	51	18	34	133
Mixed	0	0	3	2	9	14
None	25	0	0	0	0	25
Total	25	46	73	29	67	240

Table 2. Source institution breakdown of the news coverage based on source gender.

Testimony type by gender

We next analyzed source gender by testimony type. Specifically, this analysis focused on showing whether female sources were cited as a) expert, b) prestige, or c) lay testimonies.

Testimonies by source gender	Prestige	Expert	Lay	None	Total
Female	22	28	18	0	68
Male	75	50	8	0	133
Mixed	3	2	9	0	14
None	0	0	0	25	25
Total	100	80	35	25	240

Table 3. Testimonies based on source gender.

Table 3 shows that female sources, based on a within-group comparison, have the highest counts for expert testimony. Male sources, on the other hand, based on the descriptive

statistics within the group, were more frequently cited for prestige testimonies, with this difference showing statistically significantly higher counts compared to those expected based on χ^2 ($p < .001$) z-score residuals. Lay testimony for female sources (e.g., including 7 activists' posts by female sources and 2 female influencers) showed statistically significantly higher than expected counts, based on χ^2 ($p < .001$). In the mixed gender category, lay testimony was the most common and was statistically significant, showing higher counts than expected.

Reporters' gender

In relation to RQ2, we first note that there were slightly more stories with female reporters ($n = 70$, or 29.2%) than those with male reporters ($n = 55$, or 22.9%), even though news agencies' (institution) stories dominated ($n = 110$, 45.8%). Mixed gender represented 5 news stories (2.1%). Female reporters were thus featured in the most popular category more frequently than male reporters, preceded by news agencies, which were featured most frequently. Mixed was the least frequent category.

Yet, when it comes to sources, results show that female reporters used male and female sources, with a slightly higher use of male sources ($n = 36$ vs. $n = 29$). In contrast, male reporters predominantly cited male sources over female sources ($n = 39$ vs. $n = 9$). This resulted in an overwhelming predominance of male sourcing ($n = 133$), as seen in Table 4.

Source gender by reporter gender	News Agency	Female reporter	Male reporter	Mixed	Total
Female source	28	29	9	2	68
Male source	56	36	39	2	133
Mixed source	6	2	6	0	14
None	20	3	1	1	25
Total	110	70	55	5	240

Table 4. Source gender vs. reporter gender breakdown.

Further statistical analysis of χ^2 at $p < .012$ level showed that the female source and female reporter cell was statistically significantly higher for observed than expected, based on z-score residual count.

Reporter's gender and testimony and content category types

We also aimed to identify whether reporters' gender differed based on the types of testimonies they used. Descriptive statistics show that female reporters included higher

proportions of expert testimonies. While male reporters used more prestige testimonies, lay testimonies were used equally by male and female reporters, as seen in Table 4.

Reporter gender and testimony type	News organization	Female reporter	Male reporter	Mixed	Total
Prestige	43	26	29	2	100
Expert	29	32	17	2	80
Lay	18	9	8	0	35
None	20	3	1	1	25
Total	110	70	55	5	240

Table 4. Testimony type by the reporter gender.

Further statistical χ^2 analysis did not show statistically significant differences at $p < .001$ level.

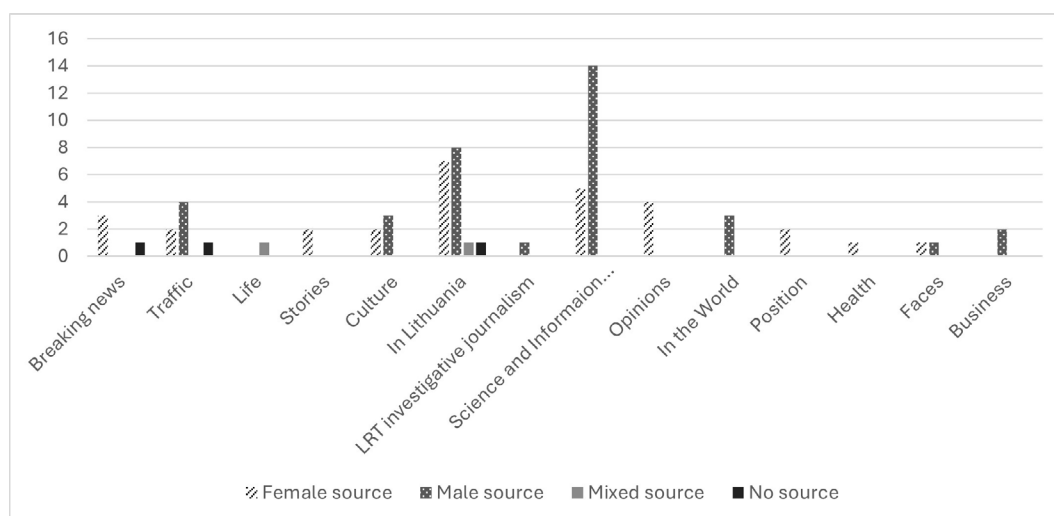


Figure 1: Female reporters use of sources by content category.

Figure 1 shows that female reporters included female sources across a range of news categories, with some being dominated by female sources: e.g., Breaking news, Stories, Opinions, Position, and Health. In other categories, female reporters included both female and male sources in a similar or equal manner, with slightly more male sources in categories like Culture and Lithuania, and Faces and Traffic. However, there were content categories where female reporters used more male sources, such as Science and IT and In the World and Business.

When it comes to male reporters' use of sources, the following trend is observed across content categories:

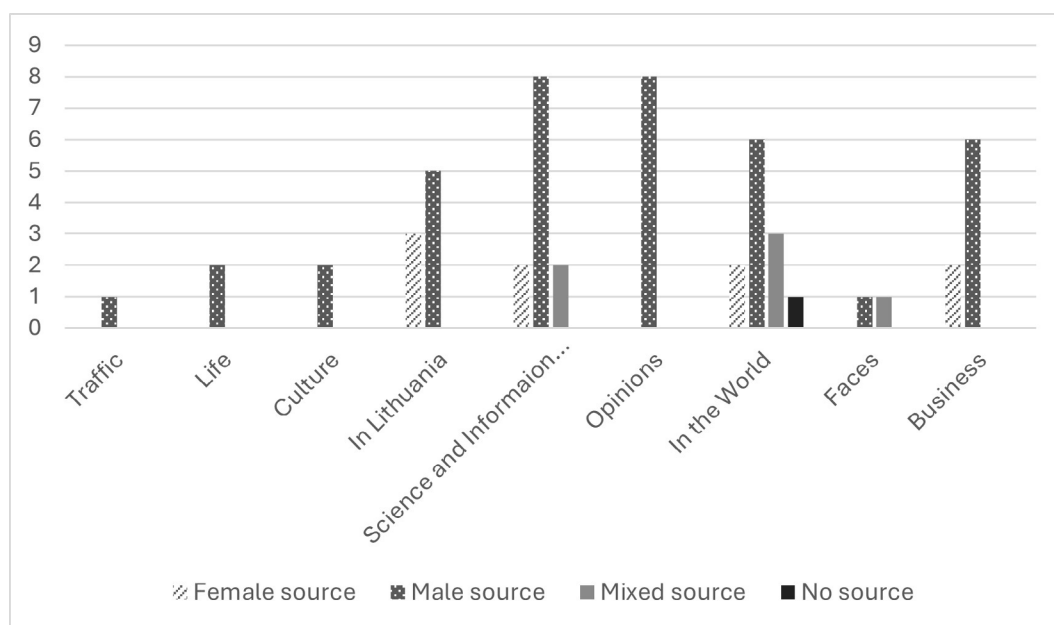


Figure 2: Male reporters use of sources by content category.

Figure 2 shows that the male reporters included male sources across a range of news categories, with some categories being dominated by male-only sources, such as Traffic, Life, Culture, and Opinions. Other categories included female sources, but less frequently, such as Lithuania, Science and IT, In the World, and Business. Faces is a category where male and female sources were equally used but less frequently overall.

Male and female reporter preferences in sources and categories show that while female journalists covered a broad range of news categories in which they included climate change sources, they continued to use male sources in a few categories. However, male reporters covered fewer categories overall but mainly used male sources when covering climate change.

Concluding discussion

This study analyzed sourcing practices in the most popular news stories about climate change from the Lithuanian national news portal LRT.lt. We asked two research questions about the role of gender in sourcing within climate change stories.

For RQ1, descriptive statistics show that female sources were used in less than a third of cited sources. Female sources had lower counts in both national and international news than male sources, even if it is worth noting that this was not a statistically significant dif-

ference. Male sources were featured from non-academic institutions twice as frequently, with statistically significant difference between observed and expected counts. Female sources were sourced from academic and non-academic institutions in descriptive statistics terms, even if female academic sourcing showed no statistically significant difference.

Male sources were found to use more prestige testimonies, which was statistically significant, aligning with previous research that suggests images of a dying nature were replaced with celebrities, as argued by Boykoff and Goodman (2009). Although lay testimony was found to be the least frequent type of testimony used, it showed statistically significant higher counts of observed female sourcing, compared to expected counts. Low descriptive counts of lay testimony indicate that climate change is not perceived as a topic that relates to everyday life, and elite sourcing still dominates, despite urges to integrate more non-elite sources in journalism, where expertise is often defined through elites (Atton & Wickenden, 2005).

Lithuanian society is unique in that it has a strong representation of women in science (Massa & Zelenkauskaitė, 2014), and this trend is reflected in our findings, where women are more frequently cited in expert testimonies. Yet, in overall terms, compared to males, women were underrepresented. Similarly, in terms of news story categories, male sources dominated most categories. Moreover, women were cited in news stories that can be stereotypically associated with traditional gender roles for women, such as health and opinion. In contrast, science and technology stories regarding climate change were dominated by male sources, consistent with previous studies (North, 2016). Male-dominated categories, such as Science and IT, were prevalent in reporting. This reflects the expectations of gender representation and how journalists of different genders navigate these spaces, as argued in previous research (Grabe et al., 2011).

For RQ2, when it comes to the reporters' gender, we observed the following trend: descriptive statistics show that female reporters cited both male and female sources, while male reporters predominantly cited male sources. There was a statistical significance for female reporters using more female sourcing. This indicates that diverse sources by gender representation are available, but journalists may choose those that reflect their own gender, as shown in previous studies (Armstrong, 2004). Prestige testimonies as sources were dominated by males (showing statistical significance), while lay testimonies were reserved for females (showing statistical significance), which reflects traditional gender roles where prestige positions are often designated to males in society.

Descriptive statistics show that female sources were included less frequently, a pattern also seen in news sourcing in domains other than climate change (Taboada, 2025; Cann & Mohr, 2001) and in other fields where citations matter, such as academia, where women are typically cited less frequently (Burstin & Arora, 2021). Female reporters included both male and female sources with a similar frequency, slightly favoring female sources, consistent with previous findings by Armstrong (2004). In contrast, male reporters were more likely to include male sources in climate change reporting, with female voices still

contested in the news (Howell & Singer, 2017; Mulupi & Zirugo, 2023). Thus, Lithuanian news organizations can still expand their pool of scientists as sources, as argued by Barel-Ben David et al. (2020). The barriers to inclusion in past research vary, including systemic non-inclusion and lack of representation (Riedl, 2024), which women experts experience; another barrier is their willingness to engage as a news source (Shine, 2021). Time constraints also play a role (Shine, 2022), as does the visibility of women, which can attract harassment and gender-based attacks (Davis Kempton & Connolly-Ahern, 2022; Shine et al., 2024).

This study finds that reporters were least likely to rely on lay testimony in their climate change coverage, thus perpetuating the status quo that prioritizes expert and prestigious sources. As a result, the journalists could not realize the potential of community-centered journalism through the inclusion of local voices – an approach proposed by scholars in both climate change communication (Boyce, 2006) and journalism more broadly (Wenzel, 2020). This provides an opportunity to include more “ordinary”, non-elite sources, or what has been termed “native reporting”, where first-person, activist accounts of events are preferred over more detached commentaries, allowing people to engage more with the topic (Atton, 2002). For example, it has been argued that the discourse on dominant expert analysis in climate change should shift to more inclusive everyday practices (Fleming et al., 2014). Similarly, incorporating women’s practices in combatting climate change in day-to-day coverage can be beneficial for diverse and more “native reporting” sources, as women play a crucial role in climate change community resilience (Singh et al., 2022), and those voices should be heard (Nicolaisen, 2024).

In addition, this work focuses on gender mainstreaming as an approach to increase more female expert voices in climate change coverage. Yet, we acknowledge that this work is limited, as it does not take into account intersectionality, as argued, for instance, by Pearse (2017).

Even though our findings stem from the analysis of the most popular news stories on climate change, potentially introducing a skewed representation of the overall sample, our broad aspirations were to advance discussions about gender mainstreaming in climate change research (Arora-Jonsson, 2014). By focusing on female experts, we aimed to emphasize the imperative to increase the engagement of the scientific community with the topic. While we do provide some results that are descriptive in nature, in addition to statistical analyses, the next steps are to compare our results with the baseline of the most recent stories on climate change, analyze qualitatively the stories that do not cite climate change sources, and interview media professionals to understand their processes of including climate change elements in their day-to-day practices, as urged by Hujanen et al. (2024).

Acknowledgements

The authors want to thank the anonymous reviewers and the special issue editors Mikkel Fugl Eskjær, Sandra Simonsen, Henrik Bødker, and Martina Skrubbeltrang Mahnke for their valuable feedback and support through the revision process. Their guidance significantly improved the quality of this work. This research has received funding from the Research Council of Lithuania (LMTLT), agreement No P-VIS-23-57. The first author is a professor at Drexel University, USA, and an affiliated scholar at Vilnius Tech University, Lithuania.

References

- Armstrong, C. L. (2004). The influence of reporter gender on source selection in newspaper stories. *Journalism & Mass Communication Quarterly*, 81(1), 139-154. <https://doi.org/10.1177/107769900408100110>
- Arora-Jonsson, S. (2014). Forty years of gender research and environmental policy: Where do we stand? *Women's Studies International Forum*, 47(part B), 295-308. <https://doi.org/10.1016/j.wsif.2014.02.009>
- Atton, C. (2002). News cultures and new social movements: Radical journalism and the mainstream media. *Journalism Studies*, 3(4), 491-505. <https://doi.org/10.1080/1461670022000019209>
- Atton, C., & Wickenden, E. (2005). Sourcing routines and representation in alternative journalism: A case study approach. *Journalism Studies*, 6(3), 347-359. <https://doi.org/10.1080/14616700500132008>
- Barel-Ben David, Y., Garty, E. S., & Baram-Tsabari, A. (2020). Can scientists fill the science journalism void? Online public engagement with science stories authored by scientists. *PloS One*, 15(1), e0222250. <https://doi.org/10.1371/journal.pone.0222250>
- Berglez, P., & Lidskog, R. (2019). Foreign, domestic, and cultural factors in climate change reporting: Swedish media's coverage of wildfires in three continents. *Environmental Communication*, 13(3), 381-394. <https://doi.org/10.1080/17524032.2017.1397040>
- Boyce, T. (2006). Journalism and expertise. *Journalism Studies*, 7(6), 889-906. <https://doi.org/10.1080/14616700600980652>
- Boykoff, M. T., & Goodman, M. K. (2009). Conspicuous redemption? Reflections on the promises and perils of the 'celebritization' of climate change. *Geoforum*, 40(3), 395-406. <https://doi.org/10.1016/j.geoforum.2008.04.006>
- Brüggemann, M., & Engesser, S. (2017). Beyond false balance: How interpretive journalism shapes media coverage of climate change. *Global Environmental Change*, 42, 58-67. <https://doi.org/10.1016/j.gloenvcha.2016.11.004>
- Burstin, H. R., & Arora, V. M. (2021). Gender disparities in journal citations – Another metric of inequity in academia. *JAMA Network Open*, 4(7), e2114787. <https://doi.org/10.1001/jamanetworkopen.2021.14787>
- Cann, D. J., & Mohr, P. B. (2001). Journalist and source gender in Australian television news. *Journal of Broadcasting & Electronic Media*, 45(1), 162-174. https://doi.org/10.1207/s15506878jobem4501_10
- Coddington, M., & Molyneux, L. (2023). Making sources visible: Representation of evidence in news texts, 2007-2019. *Journalism Practice*, 17(4), 664-682. <https://doi.org/10.1080/17512786.2021.1949629>
- Coleman, R., McCombs, M., Shaw, D., & Weaver, D. (2009). Agenda setting. In K. Wahl-Jorgensen, & T. Hanitzsch (Eds.), *The handbook of journalism studies* (pp. 167-180). Routledge. <https://doi.org/10.4324/9780203877685-20>

- Davis Kempton, S., & Connolly-Ahern, C. (2022). "Who's going to be a creep today?" Understanding the social media experiences of women broadcast journalists. *Social Media + Society*, 8(2).
<https://doi.org/10.1177/20563051221108410>
- Desmond, R., & Danilewicz, A. (2010). Women are on, but not in, the news: Gender roles in local television news. *Sex Roles*, 62, 822-829. <https://doi.org/10.1007/s11199-009-9686-5>
- Dispensa, J. M., & Brulle, R. J. (2003). Media's social construction of environmental issues: Focus on global warming – a comparative study. *International Journal of Sociology and Social Policy*, 23(10), 74-105.
<https://doi.org/10.1108/01443330310790327>
- ElGE. (2023). Gender equality index. Retrieved April 31, 2025, from
<https://eige.europa.eu/gender-equality-index/2023/domain/knowledge/LT>
- Feldman, L., & Hart, P. S. (2018). Is there any hope? How climate change news imagery and text influence audience emotions and support for climate mitigation policies. *Risk Analysis*, 38(3), 585-602.
<https://doi.org/10.1111/risa.12868>
- Feldman, L., & Hart, P. S. (2021). Upping the ante? The effects of "emergency" and "crisis" framing in climate change news. *Climatic Change*, 169, Article 10. <https://doi.org/10.1007/s10584-021-03219-5>
- Fleming, A., Vanclay, F., Hiller, C., & Wilson, S. (2014). Challenging dominant discourses of climate change. *Climatic Change*, 127, 407-418. <https://doi.org/10.1007/s10584-014-1268-z>
- Fox, E., & Rau, H. (2017). Disengaging citizens? Climate change communication and public receptivity. *Irish Political Studies*, 32(2), 224-246. <https://doi.org/10.1080/07907184.2017.1301434>
- Garcia-Perez, M. A., & Nunez-Anton, V. (2003). Cellwise residual analysis in two-way contingency tables. *Educational and psychological measurement*, 63(5), 825-839. <https://doi.org/10.1177/0013164403251280>
- Global Media Monitoring Project. (2021). Who makes the news? Global Media Monitoring Project 2020.
https://whomakesthenews.org/wp-content/uploads/2021/07/GMMP2020.ENG_.FINAL20210713.pdf
- Grabe, M. E., Samson, L., Zelenkauskaitė, A., & Yegiyani, N. S. (2011). Covering presidential election campaigns: Does reporter gender affect the work lives of correspondents and their reportage? *Journal of Broadcasting & Electronic Media*, 55(3), 285-306. <https://doi.org/10.1080/08838151.2011.597470>
- Greve-Poulsen, K., Larsen, F. K., Pedersen, R. T., & Albæk, E. (2023). No gender bias in audience perceptions of male and female experts in the news: Equally competent and persuasive. *The International Journal of Press/Politics*, 28(1), 116-137. <https://doi.org/10.1177/19401612211025499>
- Hansen, K. A. (1991). Source diversity and newspaper enterprise journalism. *Journalism Quarterly*, 68(3), 474-482. <https://doi.org/10.1177/107769909106800318>
- Hemmati, M., & Röhr, U. (2009). Engendering the climate-change negotiations: Experiences, challenges, and steps forward. *Gender & Development*, 17(1), 19-32. <https://doi.org/10.1080/13552070802696870>
- Hopke, J. E. (2020). Connecting extreme heat events to climate change: Media coverage of heat waves and wildfires. *Environmental Communication*, 14(4), 492-508.
<https://doi.org/10.1080/17524032.2019.1687537>
- Howell, L., & Singer, J. B. (2017). Pushy or a princess? Women experts and British broadcast news. *Journalism Practice*, 11(9), 1062-1078. <https://doi.org/10.1080/17512786.2016.1232173>
- Hujanen, J., Jangdal, L., Dovbysh, O., Andersen, I. V., Kolbeins, G. H., Lehtisaari, K., & Oivo, T. (2024). Intervening by staying professional: How Nordic environmental journalists make sense of their roles. *Nordicom Review*, 45(2), 257-276. <https://doi.org/10.2478/nor-2024-0022>
- Hurcombe, E. (2024, September 11). Conceptualising the "newsfluencer": Intersecting trajectories in online content creation and platformised journalism. *Digital Journalism*, 1-12. Advance online publication.
<https://doi.org/10.1080/21670811.2024.2397088>
- Jančevskaitė, R., & Telešienė, A. (2013). Klimato kaitos diskursas Lietuvos spausdintinėje ir internetinėje žiniasklaidoje. *Filosofija. Sociologija*, 2(24), 92-99.

- Jürgens, P., Meltzer, C. E., & Scharkow, M. (2022). Age and gender representation on German TV: A longitudinal computational analysis. *Computational Communication Research*, 4(1), 173-207. <https://doi.org/10.5117/CCR2022.1.005.JURG>
- Kakabadse, N. K., Figueira, C., Nicolopoulou, K., Hong Yang, J., Kakabadse, A. P., & Özbilgin, M. F. (2015). Gender diversity and board performance: Women's experiences and perspectives. *Human Resource Management*, 54(2), 265-281. <https://doi.org/10.1002/hrm.21694>
- Kažys, J. (2016). The internet search results on the term 'climate change' by local Baltic Sea Region languages. *Proceedings of Fifth International Conference on Climate Change Adaptation 2016 Challenges and Issues in Adaptation* (pp. 23-30). <https://uniqueca.com/archives/proceedings/CCA2016.pdf#page=23>
- Kažys, J. (2018). Climate change information on internet by different Baltic Sea Region languages: Risks of disinformation & misinterpretation. *Journal of Security and Sustainability Issues*, 7, 685-695. [https://doi.org/10.9770/jssi.2018.7.4\(6\)](https://doi.org/10.9770/jssi.2018.7.4(6))
- Kurpius, D. D. (2002). Sources and civic journalism: Changing patterns of reporting? *Journalism & Mass Communication Quarterly*, 79(4), 853-866. <https://doi.org/10.1177/107769900207900406>
- Lieven, A. (2020). *Climate change and the nation state: The case for nationalism in a warming world*. Oxford University Press.
- Malinauskaite, L., Cook, D., Davíðsdóttir, B., Karami, M. P., Koenigk, T., Kruschke, T., Ögmundardóttir, H., & Rasmussen, M. (2022). Connecting the dots: An interdisciplinary perspective on climate change effects on whales and whale watching in Skjalfandi Bay, Iceland. *Ocean & Coastal Management*, 226, 106274. <https://doi.org/10.1016/j.ocecoaman.2022.106274>
- Massa, P., & Zelenkauskaitė, A. (2014). Gender gap in Wikipedia editing. In P. Fichman, & N. Hara (Eds.), *Global Wikipedia: International and cross-cultural issues in online collaboration* (pp. 85-104). Rowman & Littlefield.
- Mateos de Cabo, R., Gimeno, R., Martínez, M., & López, L. (2014). Perpetuating gender inequality via the internet? An analysis of women's presence in Spanish online newspapers. *Sex Roles*, 70, 57-71. <https://doi.org/10.1007/s11199-013-0323-3>
- Mikalsen, K. K. (2010). Testimony and Kant's idea of public reason. *Res Publica*, 16, 23-40. <https://doi.org/10.1007/s11158-009-9105-3>
- Mulupi, D., & Zirugo, D. (2023). Who gets to speak? Sources in Covid-19 news coverage by Kenyan and Zimbabwean press. *Feminist Media Studies*, 23(7), 3157-3174. <https://doi.org/10.1080/14680777.2022.2099927>
- Nicolaisen, P. B. (2024). Orchestrating the climate choir: The boundaries of scientists' expertise, the relevance of experiential knowledge, and quality assurance in the public climate debate. *Climatic Change*, 177, Article 35. <https://doi.org/10.1007/s10584-024-03697-3>
- Niemi, M. K., & Pitkänen, V. (2017). Gendered use of experts in the media: Analysis of the gender gap in Finnish news journalism. *Public Understanding of Science*, 26(3), 355-368. <https://doi.org/10.1177/0963662515614570>
- North, L. (2016). The gender of "soft" and "hard" news: Female journalists' views on gendered story allocations. *Journalism Studies*, 17(3), 356-373. <https://doi.org/10.1080/1461670X.2014.987551>
- Pearse, R. (2017). Gender and climate change. *Wiley Interdisciplinary Reviews: Climate Change*, 8(2), e451. <https://doi.org/10.1002/wcc.451>
- Perga, M. E., Sarrasin, O., Steinberger, J., Lane, S. N., & Butera, F. (2023). The climate change research that makes the front page: Is it fit to engage societal action? *Global Environmental Change*, 80, 102675. <https://doi.org/10.1016/j.gloenvcha.2023.102675>

- Petersen, A. M., Vincent, E. M., & Westerling, A. L. (2019). Discrepancy in scientific authority and media visibility of climate change scientists and contrarians. *Nature Communications*, 10, 3502. <https://doi.org/10.1038/s41467-019-09959-4>
- Pilibaitytė, V. (2011). Nuclear energy discourses in Lithuania and Belarus. *Media Transformations*, 5, 66-87.
- Rabitz, F., Telešienė, A., & Zolubienė, E. (2021). Topic modelling the news media representation of climate change. *Environmental Sociology*, 7(3), 214-224. <https://doi.org/10.1080/23251042.2020.1866281>
- Riedl, A. A., Rohrbach, T., & Krakovsky, C. (2024). "I can't just pull a woman out of a hat": A mixed-methods study on journalistic drivers of women's representation in political news. *Journalism & Mass Communication Quarterly*, 101(3), 679-702. <https://doi.org/10.1177/10776990211073454>
- Schäfer, M. S., & Painter, J. (2021). Climate journalism in a changing media ecosystem: Assessing the production of climate change-related news around the world. *Wiley Interdisciplinary Reviews: Climate Change*, 12(1), e675. <https://doi.org/10.1002/wcc.675>
- Schäfer, M. S., & Schlichting, I. (2016). Media representations of climate change: A meta-analysis of the research field. In U. Olausson, & P. Berglez (Eds.), *Media research on climate change: Where have we been and where are we heading?* (pp. 14-32). Routledge. <https://doi.org/10.4324/9781315415178>
- Scheufele, D. A. (1999). Framing as a theory of media effects. *Journal of Communication*, 49(1), 103-122. <https://doi.org/10.1111/j.1460-2466.1999.tb02784.x>
- Schmid-Petri, H. (2017). Politicization of science: How climate change skeptics use experts and scientific evidence in their online communication. *Climatic Change*, 145, 523-537. <https://doi.org/10.1007/s10584-017-2112-z>
- Schreurs, M. A., & Tiberghien, Y. (2010). European Union leadership in climate change: Mitigation through multilevel reinforcement. In K. Harrison, & L. McIntosh Sundstrom (Eds.), *Global commons, domestic decisions: The comparative politics of climate change* (pp. 23-66). MIT Press. <https://doi.org/10.7551/mitpress/8406.003.0003>
- Shine, K. (2021). Gender and sourcing in student journalism from Australia and New Zealand. *Australian Journalism Review*, 43(2), 227-243. https://doi.org/10.1386/ajr_00047_1
- Shine, K. (2022). Willing but wary: Australian women experts' attitudes to engaging with the news media. *Journalism*, 23(11), 2364-2379. <https://doi.org/10.1177/14648849211007038>
- Shine, K., Fisher, A. N., Mikołajczak, G., Ryan, M. K., & Monteith, E. A. (2024). Does gender influence media engagement? Attitudes and experiences of Australian media sources. *Journalism Practice*, 18(5), 822-840. <https://doi.org/10.1080/17512786.2024.2441283>
- Shoemaker, P. J., & Vos, T. (2009). *Gatekeeping theory*. Routledge. <https://doi.org/10.4324/9780203931653>
- Simanavičienė, Z., Voločovic, A., & Simanavicius, A. (2014). Analysis of energy efficiency improvement and climate change mitigation policy in Lithuania. *WIT Transactions on Ecology and the Environment*, 186, 739-749. <https://doi.org/10.2495/ESUS140661>
- Singh, D., McDermid, S. P., Cook, B. I., Puma, M. J., Nazarenko, L., & Kelley, M. (2018). Distinct influences of land-cover and land-management on seasonal climate. *Journal of Geophysical Research: Atmospheres*, 123(21), 12017-12039. <https://doi.org/10.1029/2018JD028874>
- Singh, P., Tabe, T., & Martin, T. (2022). The role of women in community resilience to climate change: A case study of an Indigenous Fijian community. *Women's Studies International Forum*, 90, 1025-1050. Pergamon. <https://doi.org/10.1016/j.wsif.2021.102550>
- Strauss, N., Painter, J., Ettinger, J., Doutreix, M. N., Wonneberger, A., & Walton, P. (2024). Reporting on the 2019 European heatwaves and climate change: Journalists' attitudes, motivations and role perceptions. In R. E. Gutsche Jr., & J. Pinto (Eds.), *Journalism and reporting synergistic effects of climate change* (pp. 226-249). Routledge. <https://doi.org/10.4324/9781032627526>

- Streimikiene, D., Lekavičius, V., Baležentis, T., Kyriakopoulos, G. L., & Abrhám, J. (2020). Climate change mitigation policies targeting households and addressing energy poverty in European Union. *Energies*, 13(13), 3389. <https://doi.org/10.3390/en13133389>
- Taboada, M. (2025). Reported speech and gender in the news: Who is quoted, how are they quoted, and why it matters. *Discourse & Communication*, 19(1), 93-113. <https://doi.org/10.1177/17504813241281713>
- Tannen, D. (Ed.). (1993). *Framing in discourse*. Oxford University Press.
- Telešienė, A. (2009). Klimato kaitos diskursas Lietuvoje: reikšmių konstravimas dienraščiuose. *FilosoFija. Sociologija*, 20(4), 250-258. <https://www.lituanistika.lt/content/21936>
- Telešienė, A., Rimaitė, A., & Juraitė, K. (2011). Politicized discourses on environmental and technological risks: The case of Lithuania. *Socialiniai Mokslai*, 4, 20-31. <https://doi.org/10.5755/j01.ss.74.4.1032>
- Thomson, T. J., Phan, A., Holland-Batt, S., Seevinck, J., Miller, E., & Regi, S. (2023). Who or what gets referenced by whom, how often, and in which ways? Exploring journalists' sourcing practices in the context of aged care coverage. *Journalism Practice*, 19(4), 822-842. <https://doi.org/10.1080/17512786.2023.2215237>
- UN Women. (2021). Basics of mainstreaming gender into climate change and disaster risk reduction policies. <https://wrđ.unwomen.org/sites/default/files/2021-11/BASICS~1.PDF>
- UNESCO. (2021). UNESCO science report: The race against time for smarter development. <https://unesdoc.unesco.org/ark:/48223/pf0000377456>
- Vernal-Vilicic, T., & Reyes-Betanzo, C. (2024). The visibility of women experts in the Chilean Press During COVID-19. *Journalism & Mass Communication Quarterly*, 10776990241296480. <https://doi.org/10.1177/10776990241296480>
- Wenzel, A. (2020). *Community-centered journalism: Engaging people, exploring solutions, and building trust*. University of Illinois Press.
- Wheatley, D., Ross, K., Carter, C., & Boyle, K. (2024). Gender in/and the news in the UK and Republic of Ireland: Slow but (un)steady progress? *Journalism*. OnlineFirst. <https://doi.org/10.1177/14648849241276836>
- Wibeck, V. (2014). Enhancing learning, communication and public engagement about climate change – some lessons from recent literature. *Environmental Education Research*, 20(3), 387-411. <https://doi.org/10.1080/13504622.2013.812720>
- Ytterstad, A., & Bødker, H. (2022). Climate change journalism in Norway – Working with frequency around the “Green Shift”. *Journalism studies*, 23(11), 1291-1307. <https://doi.org/10.1080/1461670X.2022.2084143>
- Zeldes, G. A., Fico, F., & Diddi, A. (2012). Differences in the way broadcast, cable and public TV reporters used women and non-white sources to cover the 2008 Presidential Race. *Mass Communication and Society*, 15(6), 831-851. <https://doi.org/10.1080/15205436.2012.723278>
- Zerback, T., & Schneiders, P. (2024). Noticed and appreciated? The role of argument diversity in enhancing news credibility and reader satisfaction. *Journalism*, 25(12), 2523-2542. <https://doi.org/10.1177/14648849231226030>