

Visibility vs. Engagement: How Two Indian News Websites Reported on LGBTQ+ Individuals and Communities during the Pandemic

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Abstract

In India, online news media outlets were an important source of information for people with digital access during the COVID-19 pandemic. In India, where “transgender” was legally recognised as a category only in 2014, and same-sex marriages are yet to be legalised, it becomes crucial to analyse whether and how they reported the lived realities of vulnerable LGBTQ+ communities during the pandemic. This study analysed articles from online editions of two English-language newspaper websites, which differed vastly in their circulation figures—*The Times of India* and *The Indian Express*.

The results of our study suggest that these newspaper websites published articles surrounding various aspects of the lives of LGBTQ+ individuals with a greater focus on transgender communities. However, they lacked quality and depth. Focusing on the period spanning March 2020 to August 2021, we analysed articles using sentiment analysis and topic modelling. We also compared our results to the period before the pandemic (January 2019 – December 2019) to understand the shift in topics, sentiments, and stances across the two newspaper websites. A manual analysis of the articles indicated that the language used in certain articles by *The Times of India* was transphobic and obsolete. Our study captures the visibility and representation of the LGBTQ+ communities in Indian newspaper websites during the pandemic.

1 Background

Coronavirus (COVID-19) was declared a pandemic on 11 March 2020. A highly infectious disease caused by the acute respiratory syndrome coronavirus 2 (SARS-CoV-2), it was first detected in China in December 2019 and has since rapidly spread to other countries. From December 2019 to June 2023, over 13 million vaccines were administered, and by August 2023, over 760 million cases and 6.9 million deaths were recorded. In addition to this, 67% of the global population by November 2023 had been vaccinated with a complete primary series of a COVID-19 vaccine, which in most countries comprised of two doses (World Health Organization 2023).

With the onset of the pandemic in 2020, regulations to check the spread of the disease through physical isolation

were implemented in different countries. These checks/measures with the goal of social distancing were put in place to different degrees in different regions. While some regions implemented measures by choosing total isolation, others implemented minimal social distancing regulations (Hiscott et al. 2020).

Previous widespread outbreaks of infectious diseases have brought in their wake an intensification of gender inequalities in access to healthcare, social support, education, and employment at a global level (Wenham et al. 2020; Stemple, Karegeya, and Gruskin 2016). The COVID-19 pandemic was no exception to this norm (Al-Rawi et al. 2021; Gausman and Langer 2020; Phillips II et al. 2020; Yuan et al. 2023; Carli 2020; Alon et al. 2020; Flor et al. 2022; Fish et al. 2021). Adamson et al. (2022) performed a global cross-sectional analysis—involving 79 countries—to characterise the degree to which the levels of violence and discrimination against vulnerable communities have changed amid SARS-CoV-2. It was found that ethnic minorities, disabled people, and those who identified as gay or queer experienced more discrimination from government representatives, state apparatuses, and healthcare providers (Adamson et al. 2022). Particularly in the context of gender and sexual minorities, LGBTQ+ individuals and groups living in different countries also experienced an intensification of discrimination, prejudice, and violence during the COVID-19 pandemic, leading to unique experiences during the pandemic (Ganguly and Singh 2021; Roy, Raina 2020; Konnoth 2020; Lucas et al. 2022; Velasco, Gabi and Langness, Mel 2020; Whittington, Hadfield, and Calderón 2020). To make matters worse, laws that added to the stigma against LGBTQ+ individuals were passed and/or maintained in many countries, including Singapore and the United States.

Online news outlets were a prominent source of information during the COVID-19 pandemic for those who had digital access, covering various topics, from the spread of the virus to government regulations, measures, and updates to constrain the virus (Ghasiya and Okamura 2021). According to a survey conducted in 2020 by KPMG India Analysis, news consumption through digital applications increased, thus decreasing traditional news consumption by approximately 38–40% (KPMG India 2020). The 2021 Digital News Report by the Reuters Institute for the Study of Journalism shows that 82% of Indians use online sources to read news,

an increase from 56% in 2019 (Aneez et al. 2019; Newman et al. 2021).¹

Mainstream media outlets have the power to decide what news the readership is informed of and how that information is presented (McQuail 1987). Given the popularity of online news media during the pandemic, online news media has played a crucial role in the spread and narration of information as well. In the past, specifically in the context of the transgender community, research conducted exposes news media outlets of their marginalised and stereotypical narratives and representations of trans people (Barker-Plummer 2013; Capuzza 2016; Gupta 2019; Hackl, Becker, and Todd 2016; Åkerlund 2019). The language, or narration, used in news media outlets is used to construct issues in a certain way. It holds political power to either maintain or deconstruct ideologies based on beliefs rooted in conventions constituting hegemonic power relations (Fairclough 2013; Willox 2003). Therefore, the topics chosen by news media outlets to inform their audience and the articles' narration are crucial in forming public opinion.

To date, much research has been conducted in different geographical contexts to understand what news was conveyed by the online news media during the COVID-19 pandemic (Bogović et al. 2021; Liu et al. 2020; Wan et al. 2021; Ghasiya and Okamura 2021). Qualitative research has been conducted using critical discourse analysis of the news media articles (Wiktoruk 2015; Hindarto 2022) along with a thematic analysis of media framing (Morrison et al. 2021). Jain et al. (2021) created a hybrid model that can analyse the overall effect of digital news content in India through a hybrid approach of sentiment analysis to classify all headlines. Particularly in the context of LGBTQ+ communities, a study by Åkerlund (2019) analysed the representation of transgender people in approximately 16000 Swedish newspaper articles published in the period 2000–2017 using topic modelling and critical discourse analysis. The results indicated that the media positioned transgender people by trivialising trans expressions, incorporating these expressions into the gender binary and excluding them by framing them as “deviant” (Åkerlund 2019). Additionally, several studies and articles compiled in Arora and Kumar (2023) investigated Asian media narratives during the COVID-19 pandemic. It brought to light how the COVID-19 pandemic affected different nations differently and intensified discrimination against communities marginalised based on gender, caste, class, nationality and religion.

Studies have also found that news media still lack fair representation of LGBTQ+ communities and their activities, such as the Pride festival (Morrison et al. 2021; Semykina 2018). While online news articles covered issues

¹ Indian national print media suffered from a terrible recession during the COVID-19 pandemic. Disruptions in newspaper distribution due to lockdowns, high production costs, financial crisis due to a decline in advertisements revenue, and cost-cutting targets by laying off journalists and other employees are a few difficulties faced by the Indian print media (Saxena 2021). Despite these challenges, during the COVID-19 pandemic, Indian news media played a major role in bringing pandemic-related information to their audience.

relating to the LGBTQ+ communities, they made little effort to provide a comprehensive picture and vital context. The lack of content can be found in the lack of paragraphs and small lengths of the articles (Semykina 2018; Listiorini and Vidiadari 2022). Research conducted by Raj (2023) investigates the missing gendered narratives in Indian news media and the impact of COVID-19 on women. It analysed articles published by the top three English dailies, namely, *The Times of India*, *The Hindu*, and *Hindustan Times*, from 25 March 2020 to 25 June 2020. It found that while these national dailies covered the difficulties faced by healthcare workers, they excluded women healthcare providers and did not mention the difficulties faced by the LGBTQIA+ communities during the pandemic (Raj 2023). Therefore, the coverage of Indian news media remained largely gender-blind, rendering the gendered dimensions of the pandemic invisible (Raj 2023).

Our study focuses on narratives employed by online Indian news media and their coverage of the lived realities of LGBTQ+ communities.

We aim to answer the following questions:

1. What was the thematic scope of coverage of LGBTQ+ communities during the COVID-19 pandemic in the online version of *Times of India*, the newspaper with the highest circulation figures in India? In contrast, what was this coverage like in *The Indian Express*, which has a relatively smaller circulation?
2. What sentiment and stance can be detected in the articles using state-of-the-art methods? How and why are they similar or different from the stance and sentiment expressed before the pandemic?
3. What were the narratives and attitudes in the two newspapers in the context of LGBTQ+ communities, discernable from the identified themes (topics) and sentiment?

Our objectives, therefore, are as follows:

1. To document, collect, and analyse themes of online articles published by *The Times of India* and *The Indian Express* from the pandemic period;
2. To detect, classify, and interpret the sentiment and stance of the articles posted online during the pandemic period by *The Times of India* and *The Indian Express*, and compare them with the same before the pandemic; and
3. By synthesising insights from topics, sentiments, and stances, to arrive at insights about the narratives followed by two of the highest circulating Indian newspapers while reporting on LGBTQ+ communities during the pandemic period.

2 Data

For this study, we chose *The Times of India* (TOI) and *The Indian Express* (IE), which are English-language dailies. We considered circulation figures while deciding on the news outlets for this research.²

² We ran into practical issues with other English-language dailies that fulfil the criteria but were not considered due to restrictions in accessing their online archives.

Both *TOI* and *IE*, in their own individual way, had a sustained engagement with LGBTQ+ issues even before the COVID-19 pandemic.

According to 2023 statistics, *TOI* has approximately 16 million readers across 36 cities in India, followed by *The Hindustan Times* (Audit Bureau of Circulations 2023). *TOI* has been a visible supporter of LGBTQ+ communities, evidenced by a campaign they started, #TimesOutAndProud, in May 2019. This initiative seeks to make “daily life a little easier for the LGBTQIA+ community” and raise awareness about their lived experiences. As part of this campaign, a series of initiatives were taken across digital platforms, television, radio and on-ground activities, which included the creation of digital films and organisation of pride parades, among other activities (The Times of India 2023).

The Indian Express, a popular English-language daily, is a lesser circulating newspaper with nearly 1.6 million readers according to the Indian Readership Survey 2017 (Media Research Users Council 2019) and is not present in the list of highest circulating English-language newspapers published by the Audit Bureau of Circulations. Even though *IE* does not have a campaign or other activities providing a platform for the LGBTQ+ communities, they harness the power of written expression to raise awareness about LGBTQ+ issues. This newspaper website has informed its audience about the difficulties with the process of coming out, and the atrocities faced by LGBTQ+ individuals worldwide alongside other issues for years before the pandemic.³

These two particular newspaper websites were chosen to examine whether there is a contrast between the quality, quantity, and attitudes pertaining to LGBTQ+ communities prevalent across newspapers with differing circulation numbers during the pandemic period.

Using the archives and sitemap of these two channels, we gathered data from two timelines—March 2020 to August 2021 and January 2019 to December 2019.⁴ The former timeline was explicitly chosen as the pandemic period in our study since the World Health Organisation (WHO) declared COVID-19 a pandemic in March 2020, and by August 2021, most people with access had received their first vaccination shot, with many high-income countries offering booster vaccines to their residents (Organization et al. 2022).

News articles gathered from these time periods were filtered using keywords such as transgender and LGBT.⁵ We collected 1576 articles (477 from *TOI* and 1099 from *IE*) during the pandemic period and 1461 articles (659 from *TOI* and 790 from *IE*) from before the pandemic period. We analysed two primary components of the articles—

³Examples of *IE* articles that cover these issues are titled, “What they didn’t tell you: Coming out is a never-ending process”, “Turkey bans all LGBTI events in Ankara, citing security”, and “How to start a conversation on LGBTQI issues at home? Keshav Suri has answers”

⁴All articles were ethically scraped and were in accordance to the robots.txt file of the news outlet.

⁵The keywords used were, “Transgender”, “Trans”, “Lesbian”, “Gay”, “LGBT”, “LGBT+”, “LGBTQ”, “LGBTQ+”, “LGBTQIA”, “LGBTQIA+”, and “Queer”.

headlines and article content. We conducted sentiment analysis on both the components using distil-RoBERTa-base and ChatGPT-3.5. To complement the results from sentiment analysis, we performed stance detection using the TESTED model trained on the Fake News Challenge-1 (FNC-1) dataset (Pomerleau and Rao 2017).⁶ Furthermore, we performed topic modelling on the articles’ content using BERTopic.

3 Methods

Topic Modelling

We use BERTopic to perform topic modelling on the articles’ content. BERTopic uses a three-step process to generate topics. Firstly, the documents are converted into their embedding representation, for which we used the *all-MiniLM-L6-v2* model. Following this, the embeddings’ dimensionality is reduced, which we performed using the Uniform Manifold Approximation and Projection (UMAP) method. The last step is clustering, which was performed using HDBSCAN. The last step involves extracting topic representations from the document clusters using a class-based TF-IDF variant (Grootendorst 2022).

Sentiment Analysis

We performed sentiment analysis on news headlines and the content of the article. We analysed headlines since they are the bridge that connects the reader with the article (Palau Sampio 2016). With the age of digitisation, the way news headlines are written has also evolved. Headlines are structured at the expense of quality to make them more attractive to users and secure high positions in search results (Chakraborty et al. 2016; Scacco and Muddiman 2016). Due to the abundance of online resources, consuming content online has become hurried and superficial (Jiang et al. 2019; Chakraborty et al. 2016). Most people review and determine the context of the news article by scanning through the headline instead of reading the article’s content (Rieis et al. 2015). Therefore, analysing news headlines becomes crucial when many readers get their information solely from them. Furthermore, we perform sentiment analysis on the articles’ content to determine if the headline’s sentiment accurately represents that of the article.

RoBERTa is a robustly optimised BERT approach that has achieved SOTA results in RACE, GLUE, and SQuAD (Liu et al. 2019). Sentiment analysis on news headlines and articles was performed using distil-RoBERTa-base, which is pretrained for sentiment analysis on financial news headlines.⁷ We also used ChatGPT-3.5, which has been gaining ground rapidly. Within two months of its launch, 100 million users were using the AI bot, with 13 million unique visitors per day in January 2023 (Hu, Krystal 2023). In the task of sentiment analysis, it was found that ChatGPT’s zero-shot capabilities is on par with finetuned BERT. In contrast, with the few-shot prompting technique, ChatGPT’s performance

⁶Codebase: <https://github.com/copenlu/TESTED/tree/main>

⁷This model is hosted on HuggingFace by Manuel Romero. Link: <https://shorturl.at/syGSV>

increases significantly, surpassing finetuned BERT in certain domains (Wang et al. 2023; Qin et al. 2023). In this research, we will be using RoBERTa and ChatGPT-3.5 for the task of sentiment analysis in the context of LGBTQ+ communities. This approach is motivated by the relatively limited exploration of ChatGPT’s performance in analyzing sentiments specifically related to queer identities. By comparing RoBERTa and ChatGPT, we aim to evaluate their effectiveness and nuances in understanding and processing LGBTQ+ narratives.

The reason behind using these two models is to see how well a maverick entrant like ChatGPT performs against a finetuned post-BERT model in the domain of LGBTQ+-related news.

Previous research has stressed the importance of high-quality datasets for research on sensitive topics concerning vulnerable and marginalised groups, which requires all actors working on the research, including annotators, to be aware of the lived realities of the communities being studied (Kumaresan et al. 2023). Therefore, three LGBTQ+ annotators labelled 1576 headlines as positive, negative, or neutral. To measure the reliability (level of agreement between the raters) of the annotated dataset, we used Krippendorff’s Alpha, which measures the reliability between an arbitrary number of raters. The inter-rater score was 0.58 using Krippendorff’s Alpha. The labelled dataset was divided into 1000, 300, and 276 headlines for training, validation, and testing, respectively. The majority sentiment for each headline from this labelled dataset was used to finetune the pretrained distil-RoBERTa-base model, and few were randomly selected as examples to prompt ChatGPT-3.5 (Brown et al. 2020).

While performing sentiment analysis on the articles’ content using ChatGPT, generating results took longer due to the large input size, and ChatGPT had to constantly be reminded of either the task or the output format (see Appendix A). Therefore, we performed sentiment analysis on the content using only a finetuned distil-RoBERTa-base.

Stance Classification

Stance detection (also known as stance classification and stance prediction) is used to determine the attitude/position of the author towards a target of interest (Mohammad et al. 2016; Küçük and Can 2020). This is an important tool for assessing the stances towards a particular target and can be used in various tasks, including but not limited to identifying the leanings of media outlets (Stefanov et al. 2020).

The TESTED framework proposed by Arakelyan, Arora, and Augenstein (2023) can predict stances across various domains and has been evaluated on a multi-domain dataset consisting of 16 individual datasets, which are grouped into 4 different categories—News, Debates, Social Media, and Various (Hardalov et al. 2021). A topic-guided diversity sampling method has been introduced within TESTED, and the generated multi-domain supervised training sets were used to create a stance detection model by finetuning a pretrained language model, *roberta-large*, using a contrastive objective. This framework has achieved SOTA results on 10 out of the 16 datasets, where it obtained an F1-score

of 83.17 on in-domain experiments and 72.51 on out-of-domain experiments using the FNC-1 dataset. To pre-train TESTED, we used the FNC-1 dataset, which is a labelled dataset that contains the stance of news articles towards their corresponding headlines. The stances could be one of the four labels—agree, disagree, discuss, or unrelated.

4 Results

Topic Modelling

Topic modelling results indicate that during the pandemic, the top topic in *TOI* is Pride Celebrations and representation in popular culture, and in *IE*, it is Pride celebrations. Tables 1 and 2 mention some of the interpreted topics alongside the top 5 keywords appearing in the topic. Using data from the pandemic period, the model achieved a coherence score of 0.77 using *IE* data and 0.79 using *TOI* data.

| Topic | Interpreted Topic |
|--|---|
| Leave, employees, India, gender, and women | Diverse and gender-inclusive policies in industries. |
| Marriage, sex, court, family, and freedom | Exploitative jobs, right to privacy and forced proximity of abusive family members. |
| Voters, polling, candidates, election, and district | American politics |
| Covid, cases, said, vaccination and 19 | Disruption of normalcy, vaccination centres, medical camps and other support services |
| Police, arrested, accused, transgender, and woman | Legal cases that involved LGBTQ+ individuals |
| Transgender, help, community, people, and government | Welfare programs and policies implemented for transgender people |
| Film, people, pride, one, and community | Pride Celebrations and representation in popular culture |

Table 1: Interpreted topics of *TOI* from the pandemic period

In contrast, the most popular topic covered by *TOI* before the pandemic is ‘Legal cases that involved LGBTQ+ individuals’, whereas by *IE* is ‘LGBTQ+ Representation in popular culture’. Using data from before the pandemic period, the model achieved a coherence score of 0.68 using *IE* data and 0.82 using *TOI* data.

Sentiment Analysis

Before fine-tuning, the pre-trained distil-RoBERTa-base achieved an accuracy of 51.6%, with a precision of 50, recall of 38 and f1-score of 36. Whereas, ChatGPT obtained an accuracy of 58.8%, with a precision of 68, recall of 70 and f1-score of 60. This indicates that zero-shot performance of ChatGPT is better than domain-specific pretrained distil-RoBERTa-base in the domain of LGBTQ+-related news.

The distil-RoBERTa-base model was finetuned using five-fold cross-validation. After finetuning, the model achieved an accuracy of 77.5%, with a precision of 81.0, recall of 77.5 and f1-score of 77.7. On the other hand, few-shot ChatGPT obtained an accuracy of 75%, with a precision of 76, recall of 75 and f1-score of 75 (see Appendix B for

| Topic | Interpreted Topic |
|--|--|
| Games, Olympics, athletes, Tokyo, and Hubbard | Global LGBTQ+ representation in sports |
| Transgender, people, also, community, and government | Welfare programs and policies implemented for transgender people |
| Biden, Trump, President, first, and house | American politics |
| Pride, community, month, pride month, and rainbow | Pride Celebrations |
| People, brand, fashion, year, and one | Social movements |
| Page, actor, Elliot, like, and show | LGBTQ+ representation in popular culture |
| Film, also, show, one, and actor | Popular culture |
| Poland, law, lgbt, Turkey, and European | Global politics |
| People, book, Rowling, trans, and women | Discussions around the representation of LGBTQ+ communities in popular culture |

Table 2: Interpreted topics of *IE* from the pandemic period

class-wise metrics). This indicates that the few-shot technique considerably increased the performance of ChatGPT. However, in the domain of LGBTQ+-related news, it is inferior than finetuned distil-RoBERTa-base model.

During the pandemic period, both distil-RoBERTa-base and ChatGPT-3.5, to varying degrees, depicted that *TOI* posted positively-toned headlines the most whereas, most headlines were neutral-toned by *IE* (see Tables 3 and 4). In contrast, before the pandemic, distil-RoBERTa-base depicted that most of the headlines by both *TOI* and *IE* were neutral-toned (see Tables 5 and 6).

| Sentiment (in %) | TOI [during pandemic] | IE [during pandemic] |
|------------------|-----------------------|----------------------|
| Positive | 37.3 | 26.3 |
| Negative | 33.8 | 31.8 |
| Neutral | 28.9 | 41.9 |

Table 3: The polarity of news headlines assigned by distil-RoBERTa-base

| Sentiment (in %) | TOI [during pandemic] | IE [during pandemic] |
|------------------|-----------------------|----------------------|
| Positive | 45.9 | 23.7 |
| Negative | 23.8 | 15.1 |
| Neutral | 30.1 | 61.0 |

Table 4: The polarity of news headlines assigned by ChatGPT

Sentiment analysis on the content of the articles using distil-RoBERTa-base indicates *TOI* wrote positive-toned articles and *IE* wrote neutral-toned articles the most both during and before the pandemic period (see Appendix C).

| Sentiment (in %) | TOI [before pandemic] | IE [before pandemic] |
|------------------|-----------------------|----------------------|
| Positive | 35.8 | 19.3 |
| Negative | 27.5 | 26.8 |
| Neutral | 36.7 | 53.9 |

Table 5: The polarity of news headlines assigned by distil-RoBERTa-base

| Sentiment (in %) | TOI [before pandemic] | IE [before pandemic] |
|------------------|-----------------------|----------------------|
| Positive | 48.1 | 34.2 |
| Negative | 23.1 | 24.6 |
| Neutral | 28.8 | 41.2 |

Table 6: The polarity of news headlines assigned by ChatGPT

Stance Classification

The result from stance classification indicates that almost all of the headlines published by *TOI* and *IE* both before and during the pandemic period accurately represent the article's content. However, most of the remaining articles have content unrelated to the headline (see Tables 7 and 8). The percentage of 'agree' stance increased during the pandemic in *IE* articles, whereas it dropped in *TOI* articles.

| Stance (in %) | TOI [during pandemic] | TOI [before pandemic] |
|---------------|-----------------------|-----------------------|
| Agree | 85.53 | 87.78 |
| Disagree | 1.05 | 0.30 |
| Discuss | 0.84 | 1.34 |
| Unrelated | 12.58 | 10.58 |

Table 7: Stances of *TOI* articles

5 Discussion

During the pandemic period, the number of articles retrieved from *IE* covering LGBTQ+-related events was more than twice than those recovered from *TOI*. Moreover, the average length of the articles retrieved from *TOI* (2563 characters) was considerably lesser than that of *IE* (3909 characters). Prior research has found that while the online news articles covered issues relating to the LGBTQ+ communities, they made little effort to provide substantial and meaningful coverage of the lived realities of LGBTQ+ individuals, thus throwing into question the credibility and reliability of the article. Research has found the lack of content to consist of the lack of paragraphs and small wordcount (Semykina 2018; Listiorini and Vidiadari 2022), as can also be noticed in the articles we retrieved.

The number of articles that write about issues that do not address the urgent realities of the pandemic overshadow the articles written on the lived realities of LGBTQ+ individuals during the time of the pandemic. *IE* offers a valuable qualitative contrast to the coverage *TOI* has. *TOI* has taken up many initiatives to voice the range of difficulties faced

| Stance (in %) | IE [during pandemic] | IE [before pandemic] |
|------------------|-------------------------|-------------------------|
| Agree | 86.57 | 82.93 |
| Disagree | 1.19 | 0.89 |
| Discuss | 1.92 | 2.42 |
| Unrelated | 10.32 | 13.76 |

Table 8: Stances of *IE* articles

by LGBTQ+ individuals and communities. However, when we start looking closely at its material and compare it to *IE*, we find that there is a significant difference in the quality and meaningfulness of the articles between the two newspaper websites. The number of articles written about other important aspects of their lives, such as discrimination by government representatives, legislative institutions, violence and harassment by family members and other patriarchal institutions, had limited to no coverage. This coverage was also mostly focused on the transgender community. These themes and patterns observed in our methods—topic modelling, sentiment analysis, and stance detection—have been discussed in detail in this section. Furthermore, we have qualitatively analysed a part of our dataset to arrive at a nuanced and granular understanding of our quantitative results.

Topic Modelling

The major topics covered by *TOI* and *IE* during the pandemic were representation in popular culture, Pride celebrations, legal cases involving the LGBTQ+ communities surrounding a wide range of issues, welfare programs during the COVID-19 pandemic, disruptions in professional as well as personal spheres, and vaccination-related events. Articles on Pride Celebrations and Popular Culture have predominated before and during the pandemic.

Through our manual analysis of the dataset, we found that even though *TOI* provides greater visibility to the LGBTQ+ communities in Indian society, their writing and the language used continue to be problematic. The purpose of news media outlets is to inform, and there is an expected corresponding commitment to authentic and responsible reporting. This, however, was not fully realised in the *TOI* reporting of LGBTQ+ communities.

An example of this is the usage of the pejorative term “eunuch” to date.⁸ This term is considered dehumanising and objectifying, and is linked to other pejorative words, such as “effeminate,” “emasculated,” and “impotent.” In addition to this, *TOI*’s articles have been found describing transgender as a “condition”.⁹ The poor-quality writing could be due to submission by stringers, which have further not been verified by the editors of the media outlet, indicating the lack of meaningful interest in LGBTQ+ events. Along with this, the reporting in some articles seems to be superficial and lacks quality. Previous research has also found that often,

⁸ They mention the term in the article titled, “Eunuch kills lover of over a decade over domestic dispute.”

⁹ Please see the article titled “Kanpur: Man files FIR against in-laws for misleading him to marry transgender.”

through the use of offensive language, such as the derogatory terms used in *TOI* articles, trans people are framed as deceptive (Capuzza 2016; MacKenzie and Marcel 2009; Åkerlund 2019).

Even though *IE* does not write extensively about LGBTQ+ communities, it still manages to write a few articles on LGBTQ+-centric experiences during the COVID-19 pandemic, as observed from the results of topic modelling, such as experiences in schools, HIV/AIDS, loneliness, lack of financial resources and forced proximity to homophobic family members. Instead of simply stating facts and conveying information, the newspaper does more to educate society about the different experiences of different vulnerable and marginalised communities, including LGBTQ+ communities, across the country. Articles titled “Life in the time of social distancing: Confined in homes, people battle restlessness, anxiety”, “Home and unsafe”, and “Hit hard by lockdown: Transgender community stands isolated with no financial resources” are a few such examples.

Some overlapping topics covered by *IE* and *TOI* that can be observed in the results of our topic model—despite varying extents and quality of coverage—are sex work, Pride Celebrations, HIV/AIDS, gender dysphoria, popular culture, and welfare programs. As interpreted from the keywords, the welfare programs discussed are initiatives taken up by governments, NGOs, and groups of people to provide free kits, such as masks and ration supplies, to the transgender communities.

Additionally, as depicted by the topic modelling results, the articles touch upon HIV/AIDS, noting the demand of transgender people for special packages that include medications for hormone therapy. During the HIV epidemic, stigma surrounded the LGBTQ+ communities, and the pandemic brought back memories of the discrimination. This discrimination prevailed in many aspects of LGBTQ+ people’s lives, such as health care. Additionally, sex reassignment surgeries (SRS) could not be performed during the pandemic, which led to further complications such as hormonal imbalance (Stevens, Acic, and Rhea 2021).

The reason for covering sex work, another topic that appeared in the topic modelling results, is multi-dimensional. It is established that LGBTQ+ individuals face reduced opportunities of being accepted in mainstream jobs. This was also highlighted in the articles published by *TOI* and *IE*, which reported this issue several times during the pandemic. Sex work, dancing at weddings and festivals, and seeking alms could not continue to be a source of income during the pandemic due to regulations such as social distancing, which led to economic instability. Unfortunately, no other means of livelihood and a lack of officially recognised identity cards such as Aadhar cards and ration cards created obstacles for the transgender communities during the pandemic.¹⁰

Pride Celebrations were an event that many looked forward to during the pandemic as a form of social and communal action. These celebrations also usually raise funds

¹⁰ The lack of official documents is often due to the incorrect gender assigned during their birth, which later changed through transition.

for various LGBTQ+-related activities and support services. However, due to the pandemic, these celebrations could not take place or were conducted online, which led to insufficient funds (Konnoth 2020). The lack of a support group further intensified feelings of depression and anxiety, which is also noticeable from articles published by *TOI* and *IE*. These articles report the starting of special helplines for women and LGBTQ+ communities and share that these helplines received calls from young children and teenagers forced to live with abusive families, isolated and with no support network, susceptible to self-harm during the pandemic.

Through the topic modelling results, we also found a few articles written about global politics related to the LGBTQ+ community. These topics are alive in the public discourse, often of interest to the Indian readership due to ongoing legislative and litigation procedures. These articles were filtered into our dataset due to the conversations around the rights of LGBTQ+ communities and because, during the pandemic, many countries upheld or modified laws that added to the already existing stigma against the communities. Specifically in the American context, during the COVID-19 pandemic (June 2020), the Trump administration (2017–2021) reversed the protections put in place by the Obama administration (2009–2017). Reversing these protections allowed healthcare practitioners to deny necessary services to transgender people during the COVID-19 pandemic. This led to added stress and anxiety since many required medications, such as ART drugs and hormone supplements, along with necessary medical care when infected by the virus.

In LGBTQ+ political spaces, another significant issue raised is representation. Greater representation is vital to increasing acceptance and normalisation for LGBTQ+ community members in the coming generations (Shah et al. 2015). Representation in popular culture was the top topic in *TOI* during the pandemic but was a less significant topic in *IE*. These articles are about movies, books, and poems written about LGBTQ+ individuals, along with festivals organised specifically for recognising LGBTQ+ popular culture.

We came across another topic, Family and Friends, that was of interest to us because of the centrality of family and institutions such as schools in an individual's life, but despite its relevance to the pandemic experiences of LGBTQ+ individuals, there are very few articles dedicated to this topic.¹¹

Sentiment Analysis & Stance Classification

A study conducted by Rieis et al. (2015) found that headlines with a negative and a positive polarity garnered higher interest than an article with a neutral-toned headline (Rieis et al. 2015). According to distil-RoBERTa-base results, positive and negative headlines from both *TOI* and *IE* increased slightly during the pandemic. However, ChatGPT-3.5 results indicate that these headlines either slightly decreased or remained the same.

¹¹Any public space, such as school, can be a safe place or a place of extreme suffering. The interactions at home and school can lead to gender dysphoria, which continues to affect them later in life (Shah et al. 2015).

A positive sentiment could imply a more positive representation of LGBTQ+ communities in online media discourse. Our manual analysis indicated that a major proportion of positively-toned headlines informed of initiatives by the government, NGOs, the general public, and LGBTQ+ individuals to provide support to the LGBTQ+ communities or individuals in need. On the other hand, headlines with a negative tone contained information about the difficulties faced by the LGBTQ+ communities as well as crimes committed by LGBTQ+ individuals. However, as mentioned in our discussion on topic modelling results, the topics covered by these newspaper websites were superficial. For instance, anti-queer remarks made by famous artists and reported by *TOI* were also rightly marked negatively, but did not contribute towards communicating the experiences of the communities, particularly during the pandemic.

No major shift was noticed in the stance and sentiment of the headline and the article's content published by *TOI* and *IE* from before to during the pandemic. The results also indicate that most of the headlines accurately represented the sentiment and content of the article.

6 Conclusion

We found that even though the articles cover various aspects of the lives of LGBTQ+ individuals, they still fell short in certain ways. *TOI* and *IE* focused more on transgender communities compared to other LGBTQ+ communities. Furthermore, *TOI*, when compared to *IE*, writes superficial articles on the LGBTQ+ communities, which, however, does not mean extensive coverage by *IE*. This is noticeable from our topic modelling results that indicate the gaps in covering various aspects of the lives of LGBTQ+ individuals, the number of articles published, and the brief articles written on their lived realities. We conclude that the English-language Indian newspaper website, *TOI*, does not provide a substantive platform for LGBTQ+ communities to voice their discriminatory experiences during the COVID-19 pandemic in India.

Additionally, we found that in the task of news sentiment analysis in the context of LGBTQ+ communities, few-shot ChatGPT is inferior to finetuned domain-specific distil-RoBERTa-base model.

Our study provides an overview of the shift in the narratives of *TOI* and *IE* from before the pandemic to during the pandemic. Firstly, we have observed a positive development in both *TOI* and *IE*, which covered a wider range of gender-specific issues during the pandemic, such as gender dysphoria and the effect of private spheres on the lives of LGBTQ+ communities. However, during a time of crisis, news forums should put extra effort into conveying news that is fair, unbiased and gender-sensitive to adequately represent the inequalities present in society (Tshuma, Tshuma, and Ndlovu 2022). The increase in awareness in both media outlets, however, does not meaningfully capture the lived realities of LGBTQ+ communities. The gaps in coverage and use of offensive language render LGBTQ+ communities invisible. An overwhelming coverage of shallower issues with a minimal emphasis on the impact of COVID-19 on the lives

of LGBTQ+ communities indicates a lack of interest of the Indian media in covering LGBTQ+ issues.

7 Limitations

Our research includes articles from *The Times of India* and *The Indian Express*. Further research can be conducted on the articles posted by non-English language news media outlets, such as *Dainik Bhaskar* (Hindi language) and *Malayala Manorama* (Malayalam language), which have the highest circulation in the country. Moreover, researchers can find the most optimal keywords and filtering methods to filter out articles that do not directly relate to the COVID-19 pandemic. For instance, our dataset included articles about Indian elections that only mentioned transgender people as voter figures and had no further mention of other LGBTQ+ communities. Finally, researchers can analyse comments present under the online editions of the articles published by news media outlets to assess reader sentiment around the articles.

References

- Adamson, T.; Lett, E.; Glick, J.; Garrison-Desany, H. M.; and Restar, A. 2022. Experiences of violence and discrimination among LGBTQ+ individuals during the COVID-19 pandemic: a global cross-sectional analysis. *BMJ global health*, 7(9): e009400.
- Åkerlund, M. 2019. Representations of trans people in Swedish newspapers. *Journalism studies*, 20(9): 1319–1338.
- Al-Rawi, A.; Grepin, K.; Li, X.; Morgan, R.; Wenham, C.; and Smith, J. 2021. Investigating public discourses around gender and COVID-19: a social media analysis of Twitter data. *Journal of Healthcare Informatics Research*, 5: 249–269.
- Alon, T.; Doepke, M.; Olmstead-Rumsey, J.; and Tertilt, M. 2020. The impact of COVID-19 on gender equality. Technical report, National Bureau of economic research.
- Aneez, Z.; T Neyazi, A.; Kalogeropoulos, A.; and Nielsen, R. 2019. India digital news report. *Reuters*.
- Arakelyan, E.; Arora, A.; and Augenstein, I. 2023. Topic-Guided Sampling For Data-Efficient Multi-Domain Stance Detection. *arXiv preprint arXiv:2306.00765*.
- Arora, S.; and Kumar, K. J. 2023. *Media Narratives and the COVID-19 Pandemic: The Asian Experience*. Taylor & Francis.
- Audit Bureau of Circulations. 2023. Highest Circulated Daily Newspapers (Languages Wise). [http://www.auditbureau.org/files/JD%202022%20Highest%20Circulated%20\(language%20wise\).pdf](http://www.auditbureau.org/files/JD%202022%20Highest%20Circulated%20(language%20wise).pdf). Accessed: 2024-05-13.
- Barker-Plummer, B. 2013. Fixing Gwen: News and the mediation of (trans) gender challenges. *Feminist Media Studies*, 13(4): 710–724.
- Bogović, P. K.; Meštrović, A.; Beliga, S.; and Martinčić-Ipšić, S. 2021. Topic modelling of Croatian news during COVID-19 pandemic. In *2021 44th International Convention on Information, Communication and Electronic Technology (MIPRO)*, 1044–1051. IEEE.
- Brown, T.; Mann, B.; Ryder, N.; Subbiah, M.; Kaplan, J. D.; Dhariwal, P.; Neelakantan, A.; Shyam, P.; Sastry, G.; Askell, A.; Agarwal, S.; Herbert-Voss, A.; Krueger, G.; Henighan, T.; Child, R.; Ramesh, A.; Ziegler, D.; Wu, J.; Winter, C.; Hesse, C.; Chen, M.; Sigler, E.; Litwin, M.; Gray, S.; Chess, B.; Clark, J.; Berner, C.; McCandlish, S.; Radford, A.; Sutskever, I.; and Amodei, D. 2020. Language Models are Few-Shot Learners. In Larochelle, H.; Ranzato, M.; Hadsell, R.; Balcan, M.; and Lin, H., eds., *Advances in Neural Information Processing Systems*, volume 33, 1877–1901. Curran Associates, Inc.
- Capuzza, J. C. 2016. Improvements still needed for transgender coverage. *Newspaper Research Journal*, 37(1): 82–94.
- Carli, L. L. 2020. Women, gender equality and COVID-19. *Gender in management: an International Journal*, 35(7/8): 647–655.
- Chakraborty, A.; Paranjape, B.; Kakarla, S.; and Ganguly, N. 2016. Stop clickbait: Detecting and preventing clickbaits in online news media. In *2016 IEEE/ACM international conference on advances in social networks analysis and mining (ASONAM)*, 9–16. IEEE.
- Fairclough, N. 2013. *Language and power*. Routledge.
- Fish, J. N.; Salerno, J.; Williams, N. D.; Rinderknecht, R. G.; Drotning, K. J.; Sayer, L.; and Doan, L. 2021. Sexual minority disparities in health and well-being as a consequence of the COVID-19 pandemic differ by sexual identity. *LGBT health*, 8(4): 263–272.
- Flor, L. S.; Friedman, J.; Spencer, C. N.; Cagney, J.; Arrieta, A.; Herbert, M. E.; Stein, C.; Mullany, E. C.; Hon, J.; Patwardhan, V.; et al. 2022. Quantifying the effects of the COVID-19 pandemic on gender equality on health, social, and economic indicators: a comprehensive review of data from March, 2020, to September, 2021. *The Lancet*, 399(10344): 2381–2397.
- Ganguly, D.; and Singh, R. 2021. The transgender humanitarian crisis during the Covid-19 pandemic in India. *Intersections: Gender and Sexuality in Asia and the Pacific*.
- Gausman, J.; and Langer, A. 2020. Sex and gender disparities in the COVID-19 pandemic. *Journal of Women's Health*, 29(4): 465–466.
- Ghasiya, P.; and Okamura, K. 2021. Investigating COVID-19 news across four nations: A topic modeling and sentiment analysis approach. *Ieee Access*, 9: 36645–36656.
- Grootendorst, M. 2022. BERTopic: Neural topic modeling with a class-based TF-IDF procedure. *arXiv preprint arXiv:2203.05794*.
- Gupta, K. 2019. Response and responsibility: Mainstream media and Lucy Meadows in a post-Leveson context. *Sexualities*, 22(1-2): 31–47.
- Hackl, A. M.; Becker, A. B.; and Todd, M. E. 2016. “I am Chelsea Manning”: Comparison of gendered representation of Private Manning in US and international news media. *Journal of homosexuality*, 63(4): 467–486.

- Hardalov, M.; Arora, A.; Nakov, P.; and Augenstein, I. 2021. Cross-domain label-adaptive stance detection. *arXiv preprint arXiv:2104.07467*.
- Hindarto, I. H. 2022. Investigating How the National Online Media Reported the LGBT Community During the COVID-19 Pandemic. *Profetik: Jurnal Komunikasi*, 15(2): 208–227.
- Hiscott, J.; Alexandridi, M.; Muscolini, M.; Tassone, E.; Palermo, E.; Soultzoti, M.; and Zevini, A. 2020. The global impact of the coronavirus pandemic. *Cytokine & growth factor reviews*, 53: 1–9.
- Hu, Krystal. 2023. ChatGPT Sets Record for Fastest-Growing User Base - Analyst Note. <http://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/>. Accessed: 2024-05-13.
- Jain, J.; Dey, D.; Kelkar, B.; and Ahlawat, K. 2021. Analysis of Indian News with Corona Headlines Classification. In *International Conference on Artificial Intelligence and Speech Technology*, 116–126. Springer.
- Jiang, T.; Guo, Q.; Xu, Y.; Zhao, Y.; and Fu, S. 2019. What prompts users to click on news headlines? A clickstream data analysis of the effects of news recency and popularity. In *International Conference on Information*, 539–546. Springer.
- Kocoń, J.; Cichecki, I.; Kaszyca, O.; Kochanek, M.; Szydło, D.; Baran, J.; Bielaniewicz, J.; Gruza, M.; Janz, A.; Kandlerz, K.; et al. 2023. ChatGPT: Jack of all trades, master of none. *Information Fusion*, 99: 101861.
- Konnoth, C. 2020. Supporting LGBT communities in the COVID-19 pandemic. 2020). *Assessing Legal Responses to COVID-19*. Boston: Public Health Law Watch, U of Colorado Law Legal Studies Research Paper, 20–47.
- KPMG India. 2020. Synopsis: KPMG India Media and Entertainment Report 2020. <https://assets.kpmg.com/content/dam/kpmg/in/pdf/2020/09/synopsis-kpmg-india-media-and-entertainment-2020.pdf>. Accessed: 2024-08-25.
- Küçük, D.; and Can, F. 2020. Stance detection: A survey. *ACM Computing Surveys (CSUR)*, 53(1): 1–37.
- Kumaresan, P. K.; Ponnusamy, R.; Priyadarshini, R.; Buitelaar, P.; and Chakravarthi, B. R. 2023. Homophobia and transphobia detection for low-resourced languages in social media comments. *Natural Language Processing Journal*, 5: 100041.
- Listiorini, D.; and Vidiadari, I. S. 2022. News of LGBT on online media in 2020: endless stigma. *Jurnal Studi Komunikasi*, 6(2): 531–546.
- Liu, Q.; Zheng, Z.; Zheng, J.; Chen, Q.; Liu, G.; Chen, S.; Chu, B.; Zhu, H.; Akinwunmi, B.; Huang, J.; et al. 2020. Health communication through news media during the early stage of the COVID-19 outbreak in China: digital topic modeling approach. *Journal of medical Internet research*, 22(4): e19118.
- Liu, Y.; Ott, M.; Goyal, N.; Du, J.; Joshi, M.; Chen, D.; Levy, O.; Lewis, M.; Zettlemoyer, L.; and Stoyanov, V. 2019. Roberta: A robustly optimized bert pretraining approach. *arXiv preprint arXiv:1907.11692*.
- Lucas, J. J.; Bouchoucha, S. L.; Afrouz, R.; Reed, K.; and Brennan-Olsen, S. L. 2022. LGBTQ+ loss and grief in a cis-heteronormative pandemic: a qualitative evidence synthesis of the COVID-19 literature. *Qualitative Health Research*, 32(14): 2102–2117.
- MacKenzie, G.; and Marcel, M. 2009. Media coverage of the murder of US transwomen of color. *Local violence, global media: Feminist analyses of gendered representations*, 79–106.
- McQuail, D. 1987. *Mass communication theory: An introduction*. Sage Publications, Inc.
- Media Research Users Council, R. 2019. Indian Readership Survey Q4 2019 Highlights. Accessed: 2024-09-05.
- Mohammad, S.; Kiritchenko, S.; Sobhani, P.; Zhu, X.; and Cherry, C. 2016. SemEval-2016 task 6: Detecting stance in tweets. In *Proceedings of the 10th international workshop on semantic evaluation (SemEval-2016)*, 31–41.
- Morrison, M. A.; Parker, K. M.; Sadika, B.; Sameen, D.-E.; and Morrison, T. G. 2021. ‘Newsworthy enough?’: media framing of Canadian LGBTQ persons’ sexual violence experiences. *Psychology & Sexuality*, 12(1-2): 96–114.
- Newman, N.; Fletcher, R.; Schulz, A.; Andi, S.; Robertson, C. T.; and Nielsen, R. K. 2021. Reuters Institute digital news report 2021. *Reuters Institute for the study of Journalism*.
- Organization, W. H.; et al. 2022. WHO Director-General’s opening remarks at the media briefing on COVID-19. January, 30.
- Palau Sampio, D. 2016. Reference press metamorphosis in the digital context: clickbait and tabloid strategies in Elpais.com. *Communication & Society*, 29(2).
- Phillips II, G.; Felt, D.; Ruprecht, M. M.; Wang, X.; Xu, J.; Pérez-Bill, E.; Bagnarol, R. M.; Roth, J.; Curry, C. W.; and Beach, L. B. 2020. Addressing the disproportionate impacts of the COVID-19 pandemic on sexual and gender minority populations in the United States: actions toward equity. *LGBT health*, 7(6): 279–282.
- Pomerleau, D.; and Rao, D. 2017. Fake news challenge stage 1 (FNC-I): Stance detection. URL www.fakenewschallenge.org.
- Qin, C.; Zhang, A.; Zhang, Z.; Chen, J.; Yasunaga, M.; and Yang, D. 2023. Is chatgpt a general-purpose natural language processing task solver? *arXiv preprint arXiv:2302.06476*.
- Raj, S. 2023. Gender, Media and the Covid-19 Pandemic. *Media Narratives and the COVID-19 Pandemic: The Asian Experience*.
- Rieis, J.; de Souza, F.; de Melo, P. V.; Prates, R.; Kwak, H.; and An, J. 2015. Breaking the news: First impressions matter on online news. In *Proceedings of the international AAAI conference on web and social media*, 357–366.
- Roy, Raina. 2020. Coronavirus: Kolkata’s Trans Community Has Been Locked out of Healthcare and Livelihood. <https://scroll.in/article/968182/coronavirus-kolkatas-trans-community-has-been-locked-out-of-healthcare-and-livelihood>. Accessed: 2024-05-14.

- Saxena, V. K. 2021. Impact of Covid-19 on Indian national print media. *International Journal of Research and Analytical Reviews (IJRAR)*.
- Scacco, J. M.; and Muddiman, A. 2016. Investigating the influence of “clickbait” news headlines. *Engaging News Project Report*.
- Semykina, K. 2018. Media Construction of LGBT Prides in Russia: Framing Dynamics and Frame Resonance. *Higher School of Economics Research Paper No. WP BRP*, 81.
- Shah, C.; Merchant, R.; Mahajan, S.; and Nevatia, S. 2015. *No outlaws in the gender galaxy*. Zubaan.
- Stefanov, P.; Darwish, K.; Atanasov, A.; and Nakov, P. 2020. Predicting the topical stance and political leaning of media using tweets. In *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics*, 527–537.
- Stemple, L.; Karegeya, P.; and Gruskin, S. 2016. Human rights, gender, and infectious disease: from HIV/AIDS to Ebola. *Hum. Rts. Q.*, 38: 993.
- Stevens, H. R.; Acic, I.; and Rhea, S. 2021. Natural language processing insight into LGBTQ+ youth mental health during the COVID-19 pandemic: longitudinal content analysis of anxiety-provoking topics and trends in emotion in LGBTTeens microcommunity subreddit. *JMIR public health and surveillance*, 7(8): e29029.
- The Times of India. 2023. Times Out & Proud: It's time to claim your space with pride. <https://timesofindia.indiatimes.com/Times-Out-Proud-Its-time-to-claim-your-space-with-pride/campaignlanding/69161947.cms?from=mdr/>. Accessed: 2024-05-14.
- Tshuma, B. B.; Tshuma, L. A.; and Ndlovu, N. 2022. Media discourses on gender in the time of COVID-19 pandemic in Zimbabwe. *Health crises and media discourses in Sub-Saharan Africa*, 267.
- Velasco, Gabi and Langness, Mel. 2020. COVID-19 Action That Centers Black LGBTQ People Can Address Housing Inequities. <https://www.urban.org/urban-wire/covid-19-action-centers-black-lgbtq-people-can-address-housing-inequities>. Accessed: 2024-05-14.
- Wan, X.; Lucic, M. C.; Ghazzai, H.; and Massoud, Y. 2021. Topic modeling and progression of American digital news media during the onset of the COVID-19 pandemic. *IEEE Transactions on Technology and Society*, 3(2): 111–120.
- Wang, Z.; Xie, Q.; Feng, Y.; Ding, Z.; Yang, Z.; and Xia, R. 2023. Is ChatGPT a good sentiment analyzer? A preliminary study. *arXiv preprint arXiv:2304.04339*.
- Wenham, C.; Smith, J.; Davies, S. E.; Feng, H.; Grépin, K. A.; Harman, S.; Herten-Crabb, A.; and Morgan, R. 2020. Women are most affected by pandemics—lessons from past outbreaks. *Nature*, 583(7815): 194–198.
- Whittington, C.; Hadfield, K.; and Calderón, C. 2020. *The lives & livelihoods of many in the LGBTQ community are at risk amidst COVID-19 crisis*. Human Rights Campaign Foundation.
- Wiktoruk, A. E. 2015. *Prohibit, tolerate, or prefer: a content analysis of agenda-setting and the LGBT in MSNBC and Fox News*. Liberty University.
- Wilcox, D. 2003. Branding Teena:(Mis) representations in the media. *Sexualities*, 6(3-4): 407–425.
- World Health Organization. 2023. WHO COVID-19 dashboard. <https://data.who.int/dashboards/covid19/vaccines?n=c>. Accessed: 2024-01-13.
- Yuan, Y.; Verma, G.; Keller, B.; and Aledavood, T. 2023. Minority stress experienced by LGBTQ online communities during the COVID-19 pandemic. In *Proceedings of the International AAAI Conference on Web and Social Media*, volume 17, 936–947.

Ethics Checklist

1. For most authors...
 - (a) Would answering this research question advance science without violating social contracts, such as violating privacy norms, perpetuating unfair profiling, exacerbating the socio-economic divide, or implying disrespect to societies or cultures? **Yes**
 - (b) Do your main claims in the abstract and introduction accurately reflect the paper's contributions and scope? **Yes**
 - (c) Do you clarify how the proposed methodological approach is appropriate for the claims made? **Yes**
 - (d) Do you clarify what are possible artifacts in the data used, given population-specific distributions? No, data was obtained from publicly available news archives.
 - (e) Did you describe the limitations of your work? **Yes**
 - (f) Did you discuss any potential negative societal impacts of your work? **NA**
 - (g) Did you discuss any potential misuse of your work? **NA**
 - (h) Did you describe steps taken to prevent or mitigate potential negative outcomes of the research, such as data and model documentation, data anonymization, responsible release, access control, and the reproducibility of findings? **Yes**
 - (i) Have you read the ethics review guidelines and ensured that your paper conforms to them? **Yes**
2. Additionally, if your study involves hypotheses testing...
 - (a) Did you clearly state the assumptions underlying all theoretical results? **Yes**
 - (b) Have you provided justifications for all theoretical results? **Yes**
 - (c) Did you discuss competing hypotheses or theories that might challenge or complement your theoretical results? **NA**
 - (d) Have you considered alternative mechanisms or explanations that might account for the same outcomes observed in your study? **Yes**
 - (e) Did you address potential biases or limitations in your theoretical framework? **Yes**
 - (f) Have you related your theoretical results to the existing literature in social science? **Yes**

- (g) Did you discuss the implications of your theoretical results for policy, practice, or further research in the social science domain? **Yes**
3. Additionally, if you are including theoretical proofs...
- Did you state the full set of assumptions of all theoretical results? **NA**
 - Did you include complete proofs of all theoretical results? **NA**
4. Additionally, if you ran machine learning experiments...
- Did you include the code, data, and instructions needed to reproduce the main experimental results (either in the supplemental material or as a URL)? **Yes**
 - Did you specify all the training details (e.g., data splits, hyperparameters, how they were chosen)? **Yes**
 - Did you report error bars (e.g., with respect to the random seed after running experiments multiple times)? **Yes**
 - Did you include the total amount of compute and the type of resources used (e.g., type of GPUs, internal cluster, or cloud provider)? No, personal computers were used for running the experiments
 - Do you justify how the proposed evaluation is sufficient and appropriate to the claims made? **Yes**
 - Do you discuss what is “the cost” of misclassification and fault (in)tolerance? **Yes**
5. Additionally, if you are using existing assets (e.g., code, data, models) or curating/releasing new assets, **without compromising anonymity**...
- If your work uses existing assets, did you cite the creators? **Yes**
 - Did you mention the license of the assets? **No**
 - Did you include any new assets in the supplemental material or as a URL? **Yes**
 - Did you discuss whether and how consent was obtained from people whose data you’re using/curating? Data from newspaper websites were retrieved in accordance to the robots.txt files.
 - Did you discuss whether the data you are using/curating contains personally identifiable information or offensive content? Data was obtained from news archives from which author information etc was not retrieved
 - If you are curating or releasing new datasets, did you discuss how you intend to make your datasets FAIR? **NA**
 - If you are curating or releasing new datasets, did you create a Datasheet for the Dataset? **NA**
6. Additionally, if you used crowdsourcing or conducted research with human subjects, **without compromising anonymity**...
- Did you include the full text of instructions given to participants and screenshots? No, annotators were not given instructions to avoid data tampering
 - Did you describe any potential participant risks, with mentions of Institutional Review Board (IRB) approvals? **NA**
 - Did you include the estimated hourly wage paid to participants and the total amount spent on participant compensation? **NA**
 - Did you discuss how data is stored, shared, and de-identified? The annotators were only given the article headline for the task of sentiment analysis

8 Appendix

A Challenges using ChatGPT

For various reasons, it took us multiple prompts to get the desired outputs. First, ChatGPT used commas as the delimiter for the output, which led to multiple columns for headlines with more than one comma. Additionally, ChatGPT kept forgetting the task and would randomly summarise the headlines and output sentiments of any randomly chosen ten headlines instead of performing sentiment analysis. Furthermore, it refused to provide sentiment for a headline without further context. ChatGPT’s outputs may vary with every launch, even with the same prompt (Kocoń et al. 2023). All outputs from the rephrased instruction were considered the final output from ChatGPT. For the next step, we made sure all of the headlines given to ChatGPT were given an output. The ones that ChatGPT skipped in the process were sent again in the same conversation. Link to the conversation: <https://shorturl.at/fhoyW>

B Class-wise metrics

Tables 9 and 10 represent the class-wise metrics of distil-RoBERTa-base and ChatGPT-3.5.

| Sentiment | F1-score | Precision | Recall |
|-----------|----------|-----------|--------|
| Positive | 0.77 | 0.72 | 0.83 |
| Neutral | 0.79 | 0.92 | 0.69 |
| Negative | 0.76 | 0.64 | 0.93 |

Table 9: Class-wise metrics for evaluation of results from distil-RoBERTa-base

| Sentiment | F1-score | Precision | Recall |
|-----------|----------|-----------|--------|
| Positive | 0.72 | 0.64 | 0.83 |
| Neutral | 0.77 | 0.80 | 0.74 |
| Negative | 0.75 | 0.83 | 0.68 |

Table 10: Class-wise metrics for evaluation of results from ChatGPT

C Sentiment Analysis

Tables 11 and 12 represent the polarity of the content of the articles assigned by distil-RoBERTa-base to articles published by *TOI* and *IE* both during and before the pandemic.

| Sentiment (in %) | TOI [during pandemic] | TOI [before pandemic] |
|-----------------------------|----------------------------------|----------------------------------|
| Positive | 41.1 | 38.0 |
| Negative | 31.6 | 27.7 |
| Neutral | 27.3 | 34.3 |

Table 11: The polarity of content of *TOI* news articles assigned by distil–RoBERTa–base

| Sentiment (in %) | IE [during pandemic] | IE [before pandemic] |
|-----------------------------|---------------------------------|---------------------------------|
| Positive | 33.2 | 28.0 |
| Negative | 31.2 | 33.5 |
| Neutral | 35.6 | 38.5 |

Table 12: The polarity of content of *IE* news articles assigned by distil–RoBERTa–base