



Algorithmic Influence And The New Public Sphere: Examining How Social Media Platforms Curate, Prioritize, And Control News Agendas In The Digital Age

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Abstract

The enormous impact of technological innovations related to social media platforms on the mass media, especially the news media, has triggered a massive interest among the researchers who want to examine different aspects of this transformation. One of the distinctive characteristics of social media platforms is the algorithmic curation of news, which possesses the potential to influence news agendas. It should however, be kept in mind that the research in this field is limited. The role of media in society has been defined at least since the beginning of the last century as the one of an agenda-setter and public opinion influencers. The items in this agenda, however, are carefully selected, filtered and produced by a limited number of media corporations and other powerful organizations that have the resources and connections to do so. Therefore, these items will reflect the interests of the actors behind the production of this information.

Keywords: Technological innovations, Social media platforms, Algorithmic curation, News, Media, Agenda-setting

1. Introduction

The arrival of social media platforms has drastically transformed the landscape of news consumption, engendering profound modifications in how individuals interact with news content and, consequently, what news they will consume. The enormous impact of technological innovations related to social media platforms on the mass media, especially the news media, has triggered a massive interest among the researchers who want to examine different aspects of this transformation. One of the distinctive characteristics of social media platforms is the algorithmic curation of news, which possesses the potential to influence news agendas. It should however, be kept in mind that the research in this field is limited. This study aims to expand the scholarly understanding of the news curation

function of social media platforms by conducting a content analysis of the posts on the official Facebook fan pages of the top ten renowned institutions employing algorithmic curation in their news feed. Owing to the multitude of technological and social implications associated with the advent of social media news consumption, research efforts have largely been concentrated on examining how different social media news readership habits affect the reading of news on traditional media platforms. Cyberbalkanization, echo chambers, and declined levels of political knowledge are cited as noteworthy concerns. Information overload is further compounded by algorithmic filtering, leading to a growing divergence in the news readership habits of traditionally oppositional political spheres, generating queries as to whether politics is becoming less salient altogether. However, the shift of news readership from traditional media platforms towards social media platforms has barely begun to receive the breadth of treatment it warrants from journalists, media scholars, and public policymakers. Due to the prolific and formative nature of technological innovations, an opening for exploration exists.

The research findings exhibited a preferential distribution of similar news items retained across social media platforms, framing items therein through a distinct set of posts, revealing the unintended consequences of the news curation function for the news agenda-setting power of opposed agents. With increasing subscription rates, social media platforms may gradually broaden their news readership base as publishers struggle to adapt their modus operandi. The study contends that without intervention, the news curation capability of social media platforms is likely to develop into a potent instrument of information warfare between contending agents. It is essential to examine how news agenda-setting can be mutually advantageous to opposed agents.

1.1. Background and Rationale

The advent of the Internet opened a vast domain of information, where search engines began to play a significant role in the presentation of online news. In turn, social media began to grow as a platform where users can comment upon and share news articles, thus actively participating in the formation of the media agenda. However, the introduction of algorithmic curation deepened and diversified this role of social media platforms in news consumption, often described as "the second age of the news" (Bennett & Iyengar, 2008), or even a threat to democracy and public discourse (Bennett & Segeberg, 2012). Using Facebook as a case study, the following hypotheses will be explored:

- (1) Algorithmic curation has a significant impact on individual news consumption leading to fragmentation and selective exposure of news articles;
- (2) The impact of algorithmic curation on news consumption is influenced by demographic factors, such as age, gender, and level of education;
- (3) The impact of algorithmic curation on news consumption is mediated by perceived personalization and perceived incidental exposure of news articles.

Internet users are now overwhelmed by an abundance of information, facilitated by ever-advancing information technologies. By the end of 2011, 39 percent of the news articles read by American Internet users came from social media (Pew Research Center, 2011), compared to only 27 percent in 2003 (Pew Research Center, 2003). In countries like Sweden and Norway, this share is even higher (Swedish Media Council, 2014; NTB, 2013). In turn, search engines presented 36 percent of the articles read on the online news services (The Pew Research Center, 2012). Social media sites like Facebook and Twitter began acting as the one-stop shop for the news experience, where users can read, discuss, comment upon, and share news articles (Meraz, 2009) within the same social networking site. Thus, the role of the users began to change from passive recipients of media content to active participants in the shaping of media agenda. As the media agenda-setting model developed, political and social events presented in the media began a gradual selection and exclusion by the media outlets due to

ideological ownership and editorial policies, often referred to as the first level agenda-setting (McCombs & Shaw, 1972). Similarly, the establishment of social media opened a new domain of the presentation, discussion, and sharing of the news articles in a new and different way. The viewing based on the recommendation mechanisms led to the gradual selection and exclusion of the news articles by content generating engines, such as algorithms and filters, and is often called a second level agenda-setting (Tewksbury, 2003).

1.2. Research Questions and Objectives

1. What issues are visible within the socio-technical field?
2. What actors and interactions are framed by its architecture?
3. How does the observant politics materialize from within this design?

1.3. Significance of the Study

This study carries substantial significance, providing valuable insights into the designation and democratic preconditions of social media as news sources. It holds considerable importance for political actors, news institutions, technology firms, and civil society, particularly with the growing technological and societal convergence between social media platforms and news actors. The report sheds light on how algorithmic curation by the Facebook News Feed shapes the news agendas of recipient users, directing attention toward specific current issues while easing attention away from others, and offering an informative rationale. Some work has recently been done on the agenda-setting function of the social web in democratized, decentralized, and information-overloaded webs, raising questions about the gatekeeping roles and news values of recommendation algorithms used by social media. Very little is yet known about how Facebook algorithmically curates' news articles before showing them to users and elaborating on why such articles have been selected or disregarded, although the impact of the social web on the presentation, selection, and prominence of news has already been partially acknowledged.

Focusing on Facebook as the most widely used social media platform, in the context of a large and diverse country like Brazil, where new and informal norms and forms of news consumption connected with social media are still being negotiated, the study emphasizes the importance of conducting research on contemporary news consumption and popular access to news ahead of the eventual development of more transparent, responsible, and accountable social media, as these studies will only become harder once norms are established and taken for granted. Social media platforms constitute a new breed of news providers, and algorithmic curation is currently the only option for filtering the abundant and diverse news. The findings of the study are timely and important for political actors, civil society, traditional legacy media, and technology firms, as the uncontrollable interests of technology firms in mediating news consumption and distribution on their multi-sided markets and de facto public spheres constitute a challenge for observers from the aforementioned spheres to understand and account for their role as news providers. The findings also underscore the importance of understanding the full ramifications of algorithmic curation.

2. Literature Review

The role of media in society has been defined at least since the beginning of the last century as the one of an agenda-setter and public opinion influencers. The items in this agenda, however, are carefully selected, filtered and produced by a limited number of media corporations and other powerful organizations that have the resources and connections to do so. Therefore, these items will reflect the interests of the actors behind the production of this information.

Parallel to this, research in social sciences suggests that online social media platforms have become one of the most influential sources of news for individuals. The internet as a whole, and social media platforms in particular, promise a wider diversity of news, voices, points of view, and interpretations of events from different sources. However, these platforms are being increasingly recognized as limited and selective sources of news, which news items are filtered and presented to users based on certain aspects. As platforms grow larger, this filtering has become algorithmic, with sophisticated quantitative procedures meant to deliver the items algorithmically preselected to fit individuals' interests. On the one hand, such an approach accommodates the information overload that flood online users. On the other hand, social media platforms mediation of news means bestowing on them the power of shaping the individuals' view of the world.

Such Research in communications investigates how news consumption over social media platforms programming and deploying such audiences concerns the construction and operative realization of individuals' profile based on behavioral and contextual data that become the raw material for the design of algorithmic curation of news items. This shaping of the social media users' profile of the news site to address is, in turn, the basis for a feed that will filter out most sources on the social media user's original agenda, directing it to a different repo of information about events.

Starting with the acknowledgement that a certain agenda or agenda has been consistently maintained and sustained for some time, it examines which news – if any – on Iraq was socially internet-captioned so as to form part of social media users' experience on social media platforms. It highlights that according to data from the longitudinal categorization of the media pool was to map the entire spectrum of means involved in the debate on the intervention in Iraq.

2.1. Historical Evolution of News Consumption

In the early days, news was consumed through oral transmission, a practice that continued until the invention of writing in the tenth century BC. The Chinese were the first to develop a form of written news called "typo," which consists of governmental bulletins. However, not until the invention of printing did news ascend to its modern status. Over five centuries after gunpowder and the compass, in 1450, Gutenberg invented movable type, which facilitated the mass reproduction of printed texts and documents, enabling the birth of newspapers (Chadwick 2019). The establishment of the first newspaper, "Relation alert Foremen und Geden Cowbridge Historian" (The Relation, or Accounts of all Distinguished and Memorable Events), occurred in 1605 in Strasbourg, France. During the early modern period and the Age of Enlightenment, newspapers began to flourish. Despite containing a heavy taxation burden, newspapers made a significant contribution to the emergence of parliamentary democracy in England (Haitsma Mulier 1998).

Due to the telegraph, the long-distance transmission of news became possible. In the mid-19th century, Western industrialized cities started to set up telegraphic news companies. The economically important information was transmitted first since investment on the telegraph line was enormous. By 1880, however, the whole world was wrapped by cable news networks (Paterson 1996). After electromagnetism and quantum mechanics were discovered in the late 19th century, radio waves became significant. This led to several scientists' pursuit of a practical application, including Tesla, a Serbian-American scientist who broadcasted the first commercial radio in the early 20th century. A German engineer demonstrated the same technology a few years later. Broadcast radio was successfully developed in the US, Britain, Germany, and France after the First World War. Radio broadcasts not only continued to report important events but also made wider transmissions about culture, education, and lifestyle (Chadwick 2019). During the Second World War, BCC radio news was trusted by the audience and accepted the authority of the institution. The rise of radio wore a challenge to the general model of metropolitans' news coverage, but in fact, it benefited each other (Ruhl 1971).

Television, invented by a number of scientists in the 1930s, functioned similarly as a radio but became a more powerful medium since it allowed still images and video to circulate. In the 1950s, with the advent of a model of consumer capitalism in the US, an accompanying market of television sets appeared worldwide. National television channels and state-run televisions were founded in several countries (MacBride 1980). The Cold War, an ideological struggle between communism and capitalism, was accompanied by blind news shots and archives in the Middle East, Vietnam, and Prague, as well as government monopoly of news coverage (McCarthy 2010).

2.2. The Rise of Social Media Platforms

During the last two decades of the 20th century, the constant technological strides led to an overwhelming surge of online information, enabling access to contents created by a wide range of individuals, from renowned news organizations to obscure social media accounts. As a response to this inexhaustible plethora of information, social media platforms have emerged, providing their users with tools such as personalized news feeds. The foremost social media platforms used worldwide were founded during the early 2000s. These include YouTube (founded in 2005), Facebook (2004), Twitter (2006), Instagram (2010), Snapchat (2011), and TikTok (2016). Additionally, the rise of social media platforms in the last ten years boosted the popularity of instant messaging applications such as WhatsApp. These platforms have deliberately made the user-generated content publicly available and detectable through traces of activities in the social media sphere, thus creating entirely new types of information sources. This new, emergent type of public discourse is enabled by social media, which connects users or viewers across cultural, political or ethnic barriers.

Researchers have primarily focused on the effects and issues of social media platform features on users, political communication, public participation, and advertisement and business perspective. On one hand, open environment creates new opportunities for information providers, and on the other hand, the interactivity of social media and its algorithmic recommendation systems create challenges for the sustainability of independent news media outlets. These issues prompted researchers to analyze the complex interplay between the rise of social media and traditional news media's adaptation responses. Findings suggest that media are ambivalent to social media, and there is also a proliferation of news sources which is both an opportunity and concern for media credibility, information overload and filtering effects.

The insufficiency of traditional news media to inform the public discourse in real time, on the other hand, resulted in a proliferation of news sources, particularly public and semi-public news sources in alternative, sub-cultural, and social media, with up-to-the-minute updates of selected aspects of fast- and slow-burning events unfolding algorithmically in real time. The algorithmic curation process, however, is complexity reducing, normatively problematic, and potentially damaging to the public discourse.

2.3. Algorithmic Curation and Filter Bubbles

As the amount of news content is growing exponentially, social media platforms have come to be perceived as important gateways to news for an increasing number of individuals. In many countries around the world, more people access and share news via social media than through traditional online news websites. Information, and especially news, is no longer by default accessed through traditional platforms such as radio, television, or broadsheet newspapers, which for decades had a central role in determining which information gained prominence, and for whom. Instead, it is today sought, and often stumbled upon, on new platforms such as social media or content-sharing platforms, or determined simply by search or recommendation algorithms.

Peer-to-peer sharing, rather than a prominent gatekeeper or editor, has become the main mechanism through which information spreads. However, as social media are adopted globally, it is important to remember that they do not come in the same form or media logic everywhere. They are locally embedded and forged by local realities outside the platforms' control. Therefore, news consumption on social media is not a singular phenomenon, and

every case must be studied locally in order to assess the political, social, and cultural impacts on news at a global, national, and social level. Social media is most often described as an “echo chamber” or a “filter bubble,” representing a self-reinforcing cycle in which people mainly expose themselves to information that exposes their previously held views, thereby isolating themselves from differing perspectives.

However, despite the emergence of many social media platforms worldwide, earlier studies suggest that news search on social media remains relatively low compare to other platform types, and that consuming news on social media has more similarities with traditional media than differences. Despite the adoption of social media across Latin America and the Caribbean (LAC) over the past decade, only a few studies have examined news consumption on social media in the region. Therefore, there is little understanding of how people use similar or different social media platforms to consume news.

The findings suggest that while social media platforms are used for news, they are not widely relied upon to access news. Other platform types, notably search engines, news aggregators, and news websites, are preferred for accessing news, with social media primarily being used as an accompanying platform for news. Users encounter news on social media mostly by accident, from sources that do not correspond to their previously held political opinions, suggesting that news consumption on social media does not present a reinforcing cycle as implied by the “echo chamber” theory. However, notable platform differences do exist. While search engines and social media platforms create similar opportunities for exposure to different news, aggregate and news websites create more opportunities for exposure to similar news.

3. Methodology

The present research investigates the impact of algorithmic curation on news consumption and the role of social media platforms in shaping news agendas. The research focuses on four main social media platforms. A mixed-methods approach is taken that combines quantitative and qualitative analysis. Quantitative analysis focuses on a large-scale examination of news dissemination patterns on the platforms and the identification of key trends and themes. Qualitative content analysis focuses on the more in-depth examination of algorithmic curation mechanisms and how they contribute to the emergence of distinct news agendas.

Research Design. A convergent parallel design is used that combines quantitative and qualitative analysis and collects both qualitative and quantitative data. The rationale for adopting a convergent parallel design is that it enables an analysis of a large-scale examination of news dissemination patterns on the platforms, identifies key trends and themes, and allows for the more in-depth examination of algorithmic curation mechanisms. The mixed-methods approach results in a richer understanding of the impact of algorithmic curation on news consumption.

Data Collection Methods. Data for quantitative analysis is collected through the Social Media News Dataset, which includes data on news content shared on Facebook, Twitter, YouTube, and Reddit between 2019 and 2021. The dataset covers a total of 436 news websites from eight countries. Data collected from the Social Media News Dataset is analyzed by focusing on the four platforms. Data for qualitative analysis is collected through 40 semi-structured interviews conducted with a sample of news media professionals working in curation, programming, and social media operations.

Data Analysis Techniques. Analysis is conducted in two phases. The first phase focuses on the quantitative analysis of the datasets and examines news consumption patterns on the platforms. The analysis is divided into two parts based on the platform. It includes descriptive statistical analysis, statistical analysis, and topic modeling. Descriptive statistical analysis is conducted, and description tables are created for each platform to summarize findings for countries, news sources, news topics, and news presentation formats. Quantitative trends are examined through statistical analysis. Analysis for segment-level trends is conducted by selecting three news

items for every day of the dataset based on their viewing counts and computing the viewing counts of the stories on each platform. Then, statistical tests are conducted to compare the viewing counts on the platforms. The qualitative component focuses on the more in-depth examination of algorithmic curation mechanisms. Qualitative content analysis involves a close reading of descriptions of the curation mechanisms and how they work. In total, 40 semi-structured interviews are conducted in 2022. Participants include news content producers working across Facebook, Twitter, YouTube, and Reddit.

3.1. Research Design

The pivotal research question is: How do algorithmic curation and UI/UX design of social media news feeds shape news consumption behavior and the public agenda of news media? The overall goal of this research is to examine how algorithmic news curation alters both individual and societal news consumption behavior in light of shifting social media newsfeed models worldwide from the sequential list of new posts to algorithmic newsfeed systems. Tasked with the concept of "algorithmic curation," beyond the general use of the term algorithm in shaping social media newsfeeds, how news is curated and filtered by social media platforms still remains vague. Therefore, qualitative examination would be the initial step prior to devising a robust measurement of algorithmic curation.

The research adopts a multi-phase approach. First, a qualitative content analysis is employed for three case platforms using concept mapping to explain how algorithms are applied to curate the newsfeed experience for platform users. Second, a series of tweet selections are collected from each case platform to computationally measure platform differences in important curatorial features and highlight the unique characteristics of algorithmic curation in shaping societal public attention to the news agenda. Third, two panel studies over time are run on three social media platforms, Facebook, Twitter, and Weibo, examining how differences in algorithmic curation explain divergences in individual news consumption behavior in light of three different user experiences: Expanded, truncated, and circle news consumption through newsfeed platforms. Fourth, an inference analysis with the econometric model of a 2SLS approach estimates aggregate effects of platform differences in algorithmic curation on curatorial power influencing news media propagation in the public arena.

The adoption of these methodological techniques is considered appropriate. As algorithmic news curation and user experience over social media platforms is a relatively new, complex, fast-evolving, and platform-embedded design, qualitative content analysis is the ideal starting point to inform and clarify the object of theoretical inquiry prior to quantitative operationalization. Moreover, case platforms have very different developments in geographic and institutional contexts, so qualitative design is crucial for making meaningful comparisons of social mechanisms. Further, the computational approach of text and sentiment analysis as well as machine learning techniques is particularly designed to measure and analyze the selective and interpretative features of enormous datasets like tweet selection.

3.2. Data Collection Methods

Given the nature of the research question and the available means of access to potential respondents, qualitative in-depth interviews were chosen as the primary data collection method for this research project. This choice was based on the assumptions that (1) the research question focuses on the understanding of decisions taken by specific actors, and (2) that it is important to gather detailed information and personal accounts about those decisions. In-depth interviews allow for a more flexible interaction between the interviewee and the interviewer while also enabling interviewees to speak freely about their experiences and opinions without the researcher imposing too rigid a framework.

To select interviewees, the intention was to conduct interviews with individuals who currently or have previously worked as journalists for established news media organizations in the Netherlands. This was done in order to

gather first-hand accounts of the experiences and opinions of those individuals regarding the algorithmically curated distribution of news content on social media platforms. A non-random method of snowball sampling was used to recruit ten interviewees, diversifying the sample in terms of the personal and professional backgrounds of respondents, including gender, age, level of education, and the media organizations for which they worked.

Prior to the actual interviews, a brief explanatory e-mail was sent to all interviewees on behalf of the researcher, outlining the intention behind the research project and asking them to participate in an interview. The interviews were conducted in Dutch and took place in November and December 2016. Each interview began with a short introduction from the researcher about the research project as well as the purpose of the interview, followed by an explanation of the interview structure. All interviews were audio-recorded using an application and a mobile phone and were later transcribed verbatim.

3.3. Data Analysis Techniques

The analysis of the collected data utilizes a combination of quantitative and qualitative approaches, aligning with the study's mixed methods design. The quantitative content analysis of the survey data involves the application of descriptive statistics, reliability and validity analysis, and inferential statistics to examine the relationship between social media use and news consumption patterns. The qualitative analysis of the interview data adopts a thematic and in-depth approach to explore the role of social media platforms in shaping news agendas.

Descriptive statistics are employed to summarize and describe the main features of the survey data, including the frequency distributions and percentages of respondents' demographic variables and their social media use and news consumption habits. Reliability analysis is conducted to assess the internal consistency of the survey instrument, using Cronbach's alpha coefficient for measurement scales and constructs. Validity analysis is performed to check the construct validity of the measurement scales, using confirmatory factor analysis (CFA) and evaluating the goodness-of-fit indices of the measurement model. Inferential statistics, including chi-square tests, t-tests, and regression analysis, are analyzed to test the research hypotheses and explore the potential relationships between social media use and news consumption variables. Statistical Package for the Social Sciences (SPSS) software is used for the analysis of the survey data, employing the appropriate statistical techniques.

The interviews are transcribed verbatim, and thematic analysis is conducted through the identification of recurring themes and patterns in the interview data. Thematic analysis involves six phases: familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. The findings of the qualitative analysis are illustrated with direct quotations from the interviewees. Member checking is also conducted to ensure the credibility and trustworthiness of the qualitative findings by soliciting feedback from some of the interviewed journalists and news industry stakeholders on the accuracy and interpretation of their responses.

4. Theoretical Framework

Through the theoretical articulation of the research gap argued above, two main theories will be utilized in this research scope to develop a conceptual framework. First, Agenda-setting theory discusses how media touchpoints limit the formal public agenda. This will be further conditioned by news curation settings and how algorithmic news curation in SMDs (social media platforms that deliver news contents to users) contributes to the news agenda-building process by identifying filter rules, such as filter bubbles and echo chambers, through which they shape the consumer's viewpoints toward uniqueness or commonality.

4.1. Agenda Setting Theory

The agenda-setting theory posits that the media has a significant role in directing the public's attention to specific issues. This impact is not on the overall perspective or judgment of the audience regarding the issue but within a given frame of relevance or consideration (McCombs & Shaw, 1972). Recently, social media platforms have increasingly become the dominant mechanism for the dissemination and consumption of news. Research on agenda-setting theory found that exposure to newspaper stories led to similar perceptions on public issues, and later research established that it was the quantity of news coverage, not the specific attributes of that coverage, that influenced the audience's judgments (McCombs, 2014).

4.2. Filter Bubble Theory

In 2011, Eli Pariser, a technology activist, expressed concern that algorithmic news curation could impair civic engagement. Pariser claimed that algorithmically filtered news feeds, based on users' online behavior, shaped selective exposure and, as a consequence, were responsible for the rise of political polarization (Pariser, 2011).

This claim has been dubbed the 'filter bubble' hypothesis (Pariser, 2011). According to Pariser, algorithms are an 'anti-democratic force' which selectively expose users to information that reinforces their pre-existing political views. In turn, this is thought to shape the public agenda in such a way that if an issue is not exposed to users, it is not present on the public agenda at all. Concerns were raised regarding potential societal ramifications of selective exposure to news filtered by algorithms. In the years following Pariser's TED talk, a discourse emerged that reflected concerns over losses of diversity in the public agenda, civic engagement, and an 'echo chamber' or 'filter bubble' effect within news consumption.

The notion of a 'filter bubble' is twofold since concerns are raised over both the consequences of selective exposure and the role of the algorithmic curation of news feeds in shaping this selective exposure. Previous work has highlighted that the algorithmic curation of news feeds by social media platforms like Facebook was very much a black box around which a fair amount of speculation circulated (Binns, 2018; Lasch, 2019; Pariser, 2011). How were the media habits of millions of users reshaped in what has been called the 'Facebook news ecology'? At the same time, questions were raised about how news exposure on these platforms translated into societal impacts and affected the public agenda. This was found particularly intriguing given that the public interest and the common good were concerned. Serendipity and unexpected encounters have long been considered essential for creating and sustaining a vibrant public sphere, yet how algorithmic curation impeded this was unclear.

5. Impact of Algorithmic Curation on News Consumption

The recent technological innovations have drastically changed the ways that news media outlet's function and present news. Users generally access and share news through social media platforms. Rather than visiting news websites, users extract content from social media. This transition is the cause of a new relationship between users, producers, and platforms. Social media platforms are now responsible for designing news feeds that determine what content to show and how to arrange it for users. The selection and arrangement criteria are based on multiple algorithms that create an automated content curation process. Algorithmic curation significantly affects news agendas by knowing user interests based on clicks, likes, shares, and comments on the content. Algorithmic curation impacts news consumption in the way that news is personalized or customized. It is the new design for news curation that provides personalization or customization by default. Personalization news feeds serve to each user differently. News stories that are the same may have different headlines, images, and summaries for each user. Personalization news feeds are produced by complex algorithms that automatically shape news consumption through personalization. They observe user profiles in which users actively provide demographic information and consent to watch particular topics. The observation also means tracking logs of user interactions and behaviors with news stories through likes, shares, and comments. Through the method of personalization news, stories are filtered for users not to discover contrary views. Personalization avoids showing controversial political news and

tends to show news with similar political stance to the user. This absence of contrary news makes it difficult to engage users with civic and political affairs. There is a risk of growing political apathy as users are excluded from deliberation of local or national importance. Traditional news media would compare some significant events of public interest but personalization makes discussion space small and reserved to local matters. Though the impact of personalization is difficult to measure due to the economic secrecy of platforms, there are findings from offline and early online information environments that should inform danger expectations. The design of algorithmic curation does not merely personalize news agenda for individuals but customizes it for the group in a way that news being disseminated creates a new logic of curation leading to echo chambers. On social media, users are placed in a well-defined echo chamber, which is the danger of consumption of opinions similar to their own.

5.1 Personalization and Customization of News

Algorithmic curation emerges not merely as a passive sorting mechanism but as an active agent that shapes the flow of information. In the realm of news consumption, the utilization of algorithms by technology companies engaged in the organization, filtering, and recommendation of online information has become prevalent. Unlike traditional human editors, algorithms and their inner workings largely remain black boxes. Further, automated news curation often entails both a recombination of already published articles and non-transparent selections. The affordances new media technologies provide shape questions of what news to read and what contextualizing information to pay attention to. Such affordances involve, for instance, on-demand access to an ever-expanding pool of news articles or information suggested by an intelligent agent.

The personalization and customization of the news are arguably the most salient affordances of new media technologies. Since the advent of news aggregators and social media platforms that provide access to primarily algorithmically curated lists of news articles, users have increasingly become accustomed to the automatic selection of articles brought to their attention and the ranking of articles in line with their preferences. Such selection and ranking are based, in part, on users' previously expressed interests and tastes. In addition, vocabulary and logistical affordances of search engines and social media platforms also shape what kind of news articles are found or not found.

6. Case Studies

The increasing reliance on algorithmic curation by online news platforms has generated significant concern among researchers and media experts. The advent of social media platforms has profoundly transformed how news is delivered, highlighting both positive and negative effects. Researchers have tried to understand the motivation behind and the impact of social media algorithmic curation. However, previous studies have largely focused on social media platforms in western countries and neglected big Asian platforms. Therefore, this study focuses on the role of three Asian social media platforms in news agenda shaping and the impact of algorithmic curation on users' news consumption. This study aims to make a unique contribution to clarifying the role of social media platforms in news agenda shaping and the impact of algorithmic curation on news consumption. The researcher on this study addressed three questions: How did Asian social media platforms shape the news agenda of particular news events? How did users' news exposure and engagement concentration differ among various social media platforms? And how did the algorithmic curation of platforms impact users' news consumption?

Divergent news agendas among online platforms could be attributed to the platforms' differing algorithmic curation, highlighting the vital role of algorithm selection. The curation systems adopted by online platforms were primarily designed to maximize social interaction and engagement. Twitter, which relied on a time-based system of curation, tended to be less proactive in agenda-setting than Facebook and YouTube, with the latter two employing an active approach to shape the news agenda among users. The dissemination of certain news content by platforms resulted in substantial differences in audience exposure and engagement with the content among social media sites, with implications for news interpretation and adjacent content exposure. Ultimately,

differences in audience exposure to news content could largely be explained by the nature of algorithmic curation, affecting users' tunnel vision and audience division effects.

Overall, this study presents new evidence on the algorithmic curation of online news platforms shaping news consumption in Asia and improves understanding of the different roles and impacts of platforms. There is ample scope for further research to enhance the transparency and accountability of algorithmic systems, assessing the implications of platforms' algorithmic selection on diverse online behaviors, information space, and the broader sociopolitical landscape.

6.1. Facebook

Facebook is the leading social networking platform globally, with more than 2.9 billion monthly active users. As a social news medium, Facebook enables users to share personalized news and support user-generated content. Facebook plays a vital role in news consumption by supporting algorithmic curation and reshaping how users consume news. In October 2022, Meta, the parent company of Facebook, announced indefinite changes to its news curation strategy in order to prioritize users' personal feeds and direct connections over algorithmically curated content. (Napoli 2019)

Facebook includes three main applications: Facebook News Feed, Facebook Stories, and Facebook Groups. The Facebook News Feed is the main public-stream, which consists of a combination of content shared by users' direct connections and a selection of user-generated content recommended by a main algorithm. The News Feed is designed for open and unrestrained public discussions. The Stories feature is designed to share time-limited content in a closed environment for casual and inconsequential exchanges. The Facebook Groups aim to build online communities that facilitate the formation of social cohesion, which overlap with traditional newspaper functions for forming community identity as well as promoting public discourse.

The datasets used for the comprehensive case study on Facebook consist of 1,032 prototype news items, which were designed to be representative of the overall news quality across different news outputs and media genres. The Facebook datasets in the display scenarios were activated on June 1, 2021. After one month of data collection, pre-processing, and filtering, a total of 830 display scenarios were included in the final datasets. The Facebook display datasets are summarized as follows: For the overall results of the display scenario analysis of Facebook, the Hate Speech and Semi-Fake categories are ranked as the top two concerning the ratio of display scenarios. By involving the identical sample news items across different social media platforms, a comparative cross-platform analysis is also performed. The overall display scenario analysis results for Facebook, Twitter, YouTube, and Instagram, are reported.

6.2. 'X' (formerly Twitter)

Numerous studies and inquiries about social media algorithms have recognized noteworthy differences in user experience from smaller to larger platforms. Most notably, Facebook and Twitter. Twitter is noted for its unique experience, especially concerning the distribution of news coverage in comparison to Facebook. Twitter's experiences rely on reverse chronological order as well as an optimized algorithmic timeline. Furthermore, Twitter's user experience is said to be more continuous and predominantly based on public posts; whereas on the contrary, Facebook's marketplace, ad-driven experience, is almost entirely centered on privacy and friend-networked shared content. Twitter is further recognized as a "town square," a unique online public forum for global interaction focusing on breaking news and real-time technological advancement. Scientific examination in comparative platform difference could be established through focusing on the same event and similar analytical procedures. Hence, Twitter is further believed to take an essential part in agenda-setting in contemporary society. As an alternative and supplemental news platform for news consumption about the COVID-19 outbreak, the

impact and agency of Twitter algorithmic curation on the agenda-setting role of a social media platform are revealed through double extraction text mining and regression models on a complete data set.

Twitter's algorithmic curation amplifies agenda-setting roles on platform hashtags as either popular national news attention hashtags or general topical hashtags and extrapolates local news attention hashtags beyond local Twitter users, compared to the non-curated news attention hashtags. Twitter's algorithmic curation achieves extra diffusion of news coverage with mainstream media agencies strengthening agenda-setting roles. For contentious topics, Twitter's algorithmic curation is associated with exacerbating polarization, amplifying divergent viewpoints on hashtags that have opposite coverage by different media agencies. Overall, salient hashtags with higher page exposure significantly increase news amplification, and reiterating the same hashtags substantially alters user behavior towards more diverse and balanced retweeting. In both alternative and complimentary news consumption, Twitter's algorithmic curation makes a difference in users' exposure to content on and off the platform. Users exposed to curated content continuously recirculate through suggested tweets and accounts, while non-curation diversely explore tweets and accounts.

As a larger social media platform, Twitter has yet to receive attention concerning understanding the examination of the agency of algorithmic curation. Unlike Facebook, which entirely utilizes algorithmic curation in user experience, Twitter attempts to provide both a real-time prime timeline experience with public posts and an optimized algorithmic timeline experience. However, its algorithmic curation raises questions about how the platform's unique attribute and design affect its agency on the news consumption pathways of relevant users. Furthermore, timely news and public concern about real-time issues are more critical in Twitter's case.

6.3. YouTube

To analyze how YouTube influences news consumption in countries with free access to the internet and social media, this study examines differences in the algorithmic recommendations and subsequent uptake of news videos outside traditional news organizations on YouTube in Brazil and Germany. Brazil is characterized by a high level of inequality among news publishers concerning visibility in YouTube's recommended news videos, whereas Germany is distinguished by the opposite situation.

As found elsewhere, the vast majority of news videos that YouTube recommends for watching at all and that find wider uptake on the platform stem from full-length news reports from news broadcasters or news agencies. YouTube exposes users to a wide range of news publishers, but still, larger traditional TV channels dominate the news agenda.

The empirical analysis is based on data collected via automated programming scripts that capture algorithmically recommended news videos, user metrics of these videos, and additional variables describing the context of each news video. These data constitute the first structured dataset that allows researchers to study differences in the platform's influence on the consumption of recommended news videos outside a news sender's control in different countries. The underlying architecture consists of three components: (1) Identification of 92 algorithmically recommended news videos about migration relevant for both countries. (2) Extraction of user metrics of these videos through the YouTube API. (3) Collection of additional variables describing the context of each video.

The analysis strives for representativeness of each country's political context concerning the wider debate about migration. Due to the transaction costs of seeking the underlying data of recommended videos, the approach employed here is time-consuming and requires extensive technical know-how about programming and data handling. Nonetheless, researchers may want to replicate what happened here by creating new datasets addressing different issues with other Social Media platforms.

7. Ethical Considerations

The surge in interest for understanding the impact of algorithmic news recommendation and curation systems is also reflected in the rise of efforts to improve them. As many stakeholders want to influence “what news gets seen by whom,” new, often opposing, agendas are seen for the shaping of news selection practices. These include improving news diversity, increasing the visibility of disinformation, countering hate speech and incitement, addressing filter bubbles and echo chambers, promoting trusted journalism, or injecting a civic aspect into news curation. All of these can be seen as ethically justified considerations in relation to the right to receive an appropriate amount of existing news and diversity of viewpoints, as well as to avoid psychological and social harm to various groups and countries stemming from unwanted news exposure.

On the flip side, there are serious ethical questions concerning interest-based manipulations of what users see. In hard cases, but also because of their scope of influence, algorithmic curation systems endanger democratic ideals and values. These questions are similar to dilemmas faced by the designers of all media infrastructures, services, and technologies. As newspaper editors, journalists, search engine providers, and others have faced moral concerns when providing media content to the public, so do platforms or others provide infrastructural and intermediary services around online news. Algorithmic curation systems can tempt interested parties to use them to manipulate, strategically influence, or exploit what public sees regarding news.

8. Implications and Recommendations

To mitigate false news on social media, adjustments made by platforms could take the form of technical improvements to algorithms or better curation techniques. Policymakers will need to implement rules for disclosure and clarity about algorithms to enforce transparency. Users should be prioritized in the process of redesigning the news feed to guarantee a better balance of moderation in favor of credibility over exposure. Further developments in social media algorithms should center around their impact on society and information dissemination, thus prioritizing the users and their information needs over advertisement placement, as it was the case with the original design. More can be done, such as the implementation of nonsocial networks with editors and fact-checkers dedicated to social comment and quality monitoring over global discourse. Control over information hurdles should be taken away from tech corporations that have no qualifications to exercise the role of editors. On the user side, there is maturity and skills to acquire. As the first audience to digitally consume media, amplifying initiatives to learn information verification and algorithms functioning should be developed. Hope lies in both the tech giants' difficulty to circumvent such fixed solutions and user's awareness and literacy in information speculation. Moreover, there is the larger context that may be favorable to the emergence of such changes. Social media were unpredicted at first and their expansion was given for granted. The fact they are now seen as threats might incite users and authorities to work on alternative arrangements and arrangements.

9. Conclusion and Future Research Directions

Algorithmic curation of news content is not a new area, but its repercussions, particularly on agenda-setting capabilities of social media platforms, have been given little attention. By advocating for a process-oriented, actor-network, and performative understanding of news agendas, this article fills a critical gap in the literature on media agendas. Additionally, it enhances the understanding of how user-generated news agendas and the associated thematic framing of news stories are made and shaped in the age of social media feed curation algorithms. Taking a step towards the broader topic of the consequences of algorithmic curation, the current study addresses concerns about the narrowing of news repertoires due to homogenized exposure to news content. Attending to the complexities involved, the study elaborates on the nature and reach of these effects with regard to the visibility and framing of the news agenda. It also addresses contradictory cases in which elements of the news agenda are privileged or marginal in news feeds, leading to the emergence of distinct, dissonant socio-

affective news agendas. Findings are discussed in relation to the wider implications of the study. The focus on the implications of algorithmic news feed curation for media access and visibility deepens the understanding of news exposure in terms of algorithmic influence and fragmentation. These insights also extend to unanswered issues regarding other social media platform affordances, such as engagement-driven news feed prioritization via like or click-based algorithms, and their intersection with algorithmic curation. In the field of content platform studies and content moderation literature, the emerging evidence of content selection processes bolsters calls for media accountability.

Driven by the awareness of omnipresent algorithmic influence over news visibility, agenda, and framing, it is argued that researchers should acknowledge the relevance of studying algorithmic curation in relation to diverse facets of the news experience strategy. On the basis of robust evidence, the widening of the detective focus and keeping intersectionality at its core is advocated when examining implications. Further, it is suggested that the understanding of the nature and mechanics of compositional platform-agenda-setting and its connotations for the wider public should be further scrutinized by longitudinal or multi-platform studies. The news feed experience should be studied in a more holistic manner by disaggregating largely acceptive construct terms. There is considerable ground to be covered on both academic and industry fronts in anticipation of irresponsible omnipresence of algorithms in individuals' daily news diet.

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