

The Impact of Recommendation Algorithms on News Consumption- A survey

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Abstract:

This investigation assessed the influence of recommendation algorithms on news consumption by social media users via a survey of 300 participants. Findings indicated substantial reliance on these platforms for news, despite incomplete user comprehension of algorithmic functions. Participants favored chronological news presentation and perceived algorithms as limiting source diversity and potentially amplifying existing biases. While dependence on algorithmic suggestions was moderate, users preferred familiar sources and expressed concern regarding reduced exposure to varied perspectives. A desire for enhanced user control over news selection was evident. The study advocates for increased user awareness and active pursuit of diverse information sources. It also underscores the necessity for greater algorithmic transparency and user control features on social media platforms to facilitate a balanced and comprehensive news ecosystem. Further research into the broader impacts of algorithms and the development of more accountable recommendation systems are recommended.

Keywords: Recommendation Algorithms; Social Platform; News Consumption; Facebook; bias.

ملخص :

تسعى هذه الدراسة إلى تقييم تأثير خوارزميات التوصية على استهلاك الأخبار من قبل مستخدمي وسائل التواصل الاجتماعي، وذلك من خلال مسح شمل 300 مشارك، حيث أشارت النتائج إلى اعتماد كبير على هذه المنصات للحصول على الأخبار، على الرغم من الفهم غير الكامل لوظائف الخوارزميات لدى المستخدمين، كما فضل المشاركون عرض الأخبار بترتيب زمني وأدركوا أن الخوارزميات تحد من تنوع المصادر وربما تزيد من التحيزات القائمة، وبينما كان الاعتماد على الاقتراحات الخوارزمية متوسطاً، فضل المستخدمون المصادر المألوفة وأعربوا عن قلقهم بشأن انخفاض تعرضهم لوجهات نظر متنوعة، وقد ظهرت رغبة واضحة في زيادة تحكم المستخدم في اختيار الأخبار، وتدعو الدراسة إلى زيادة وعي المستخدمين والسعي للنشط وراء مصادر معلومات متنوعة، كما تؤكد على ضرورة زيادة شفافية الخوارزميات وتوفير ميزات تحكم للمستخدمين على منصات التواصل الاجتماعي لتسهيل نظام إخباري متوازن وشامل، وتوصي الدراسة في الأخير إلى إجراء المزيد من البحوث حول التأثيرات الأوسع للخوارزميات وتطوير أنظمة توصية أكثر مسؤولية.

الكلمات المفتاحية : الخوارزميات، استهلاك الأخبار، المنصات الاجتماعية، الفيسبوك، التحيز.

1. INTRODUCTION

This study acknowledges the pivotal role that social media platforms have come to play in shaping the contemporary news landscape. Beyond being spaces for social interaction and exchanging

opinions, these platforms have become primary sources for news and information for a wide segment of the population. In this context, recommendation algorithms emerge as a fundamental mechanism for organizing and personalizing the flow of news content that users see, raising important questions about the impact of these algorithms on the nature and patterns of news consumption.

This study is based on the premise that recommendation algorithms, with their ability to analyze user preferences and past behaviors, play an active role in determining the news displayed to users. This role raises questions about the extent to which these mechanisms influence the diversity of news sources users are exposed to and their ability to form a comprehensive and balanced view of current events. Do these algorithms lead to a narrowing of the scope of news consumed by individuals, confining them to "information bubbles" that reinforce their existing opinions and exclude differing perspectives? Or do they contribute to facilitating access to news relevant to their interests and broadening their horizons?

This study also seeks to investigate the impact of recommendation algorithms used on social media platforms on the news consumption patterns of the platforms' users. Specifically, it aims to understand how these algorithms shape the nature of the news individuals are exposed to, the sources of this news, and the degree of diversity or homogeneity in the news content consumed. The study also explores users' perceptions of the role and impact of these algorithms on their news experience. To achieve these goals, the study focuses on a sample of social media platform users, considering them the group most interactive with and affected by these algorithms in the context of news consumption. Understanding the experiences and opinions of this group is a fundamental step toward building a clear picture of the impact of these technologies on the digital news landscape.

This study employs a survey methodology, collecting data from a representative sample of social media platform users. This methodology was chosen for its ability to gather wide-ranging information about individuals' opinions, attitudes, and behaviors in their natural environment. The study targets a sample of 300 social media platform users. This sample was carefully selected to ensure representation across different age groups and usage patterns of various social media platforms, while considering the proportional distribution of active users on these platforms within the study's geographical context, such as Algeria or the Arab region.

This study hopes that its findings will contribute to a deeper understanding of the impact of recommendation algorithms on the digital news landscape and the news consumption behaviors of social media platform users. It also aspires to provide valuable insights that can benefit researchers, policymakers, and social media platforms themselves in developing more transparent and responsible recommendation mechanisms. This will ensure that users receive a diverse and balanced flow of news, contributing to their awareness and understanding of current events.

1.1. Research Problem:

Social media platforms have fundamentally transformed how individuals access and consume news, becoming primary news gateways for many users. In this context, recommendation algorithms play an increasingly important role in determining the nature and content of the news displayed to these users. By analyzing user data and preferences, these algorithms personalize the flow of news, raising questions about the implications of this personalization for the user's news experience (Brent, Steven, & Peter, 2020).

Concerns are growing about the possibility that recommendation algorithms may confine users to "information bubbles" or "echo chambers," reinforcing their existing opinions and reducing their exposure to different viewpoints. This potential bias may negatively affect their ability to form a comprehensive and balanced understanding of various events and issues. On the other hand, some argue that these algorithms may facilitate access to news relevant to users' interests, saving them time and effort in searching for information (João, 2023).

Given this ongoing debate about the impact of recommendation algorithms on news consumption, it is essential to conduct a systematic scientific study that seeks to understand this impact more deeply from the users' perspective. Exploring their perceptions, experiences (David & al, 2023), and

behaviors related to news consumption on social media platforms in the presence of these algorithms is a crucial step toward evaluating the effects of these technologies on the digital news landscape:

What is the impact of recommendation algorithms used on social media platforms on news consumption patterns among a sample of these platforms' users?

1.2. Study Questions:

- What are the prevailing news consumption patterns among the social media platform users in this study?
- To what extent are social media platform users aware of the role of recommendation algorithms in displaying news?
- How do social media platform users perceive the impact of recommendation algorithms on the diversity of news sources they are exposed to?
- Is there a relationship between the level of reliance on news recommended by algorithms and the degree of diversity in the news content consumed?
- What are the opinions and evaluations of social media platform users regarding the advantages and disadvantages of recommendation algorithms in the context of news consumption?

1.3. Study hypotheses :

- There is a dominant pattern of news consumption that relies heavily on algorithmic recommendations among the majority of social media platform users in the study.
- Awareness of the role of recommendation algorithms in displaying news is low among a significant proportion of social media platform users.
- Social media platform users believe that recommendation algorithms limit the diversity of news sources they are exposed to.
- There is a negative relationship between the level of reliance on news recommended by algorithms and the degree of diversity in the news content consumed.
- Social media platform users' opinions about the disadvantages of recommendation algorithms in the context of news consumption outweigh their opinions about the advantages.

1.4. Study Objectives:

- **Cognitive Objective:** To identify the nature of the impact of recommendation algorithms on news consumption patterns among social media platform users.
- **Academic Objective:** To contribute to the body of scientific literature related to the study of the impact of technology on news consumption and to provide empirical data that researchers can use in future studies.
- **Societal Objective:** To shed light on the potential effects of recommendation algorithms on public awareness and the diversity of their information sources, serving efforts to promote a more open and balanced information society.
- **Future-Oriented Objective:** To provide insights into the future challenges and opportunities related to the role of recommendation algorithms in shaping the digital news landscape and to anticipate the need for developing more transparent and responsible mechanisms in the operation of these algorithms.

1.5. Study Significance:

This study gains significant importance in light of the widespread adoption of social media platforms and their growing role as a source of news and information. Understanding how recommendation algorithms affect news consumption is essential for comprehending the dynamics of the digital news landscape and its implications for public awareness. This study also contributes to filling a knowledge gap regarding users' perceptions of this impact, an aspect often overlooked in technical studies that focus on the inner workings of algorithms (Rodrigo & José, 2019). Additionally, the study's findings can benefit policymakers and social media platforms in developing strategies aimed at promoting diversity in news consumption and combating the spread of misinformation. Academically, the study provides valuable empirical data that can serve as a basis for future in-depth

studies on the impact of technology on media and society. Finally, the study hopes to contribute to raising user awareness about the role of these algorithms and to encourage them to adopt more conscious and balanced news consumption behaviors.

1.6. Study Methodology and Tools

This study employs a descriptive survey methodology, which aims to collect and analyze data to describe the characteristics, opinions, and trends of the study population concerning the phenomenon under investigation. This methodology is suitable for achieving the study's objectives of understanding the impact of recommendation algorithms on news consumption patterns among social media platform users.

To collect the data necessary to achieve the study's objectives, answer its questions, and test its hypotheses, the study relies primarily on a questionnaire. The questionnaire was designed as the main data collection tool and consists of 25 closed and open-ended questions distributed across five specific sections addressing different aspects of the study topic. The first section focuses on exploring news consumption patterns among users on social media platforms. The second section examines users' awareness of the role of recommendation algorithms in displaying news content. The third section seeks to understand users' perceptions of the impact of these algorithms on the diversity of news sources they are exposed to. The fourth section addresses the relationship between reliance on recommended news and the degree of diversity in the content consumed. The fifth section focuses on gathering users' opinions and evaluations of the advantages and disadvantages of recommendation algorithms in the context of news consumption. In addition to these thematic sections, the questionnaire includes a section for participants' personal data to obtain demographic information that can be used for deeper analysis of the results and to understand potential differences between different user groups. The questionnaire questions were carefully designed to ensure comprehensive coverage of the study's aspects and to achieve its objectives accurately and effectively.

1.7. Study Limitations:

- **Temporal Limitations:** The study's timeframe is defined as spanning from December 30, 2023, to January 10, 2024.
- **Spatial Limitations:** The study is not limited to a specific geographical area, given its reliance on an electronic questionnaire for data collection, which was distributed randomly online. This allows the study to reach a wide range of social media platform users from different regions.
- **Thematic Limitations:** The study focuses specifically on the impact of recommendation algorithms used on social media platforms on news consumption. It specifically aims to understand users' perceptions and behaviors related to this impact.
- **Human Limitations:** These are represented by the study's target sample, which consists of social media platform users who completed the electronic questionnaire within the specified period. The study aimed to collect data from 300 of these users to achieve its objectives.

1.8. Study Concepts and Terminology:

The current study relies on a set of fundamental concepts and terms that form its theoretical framework and aid in defining its scope and analyzing its results. Key concepts include:

- **Social Media Platforms:** (Social Media Platforms) These are defined as websites and applications that allow users to create, share, and interact with content, and build social networks with other users (Alizadeh, Nikparvar, & Pourabbas, 2021). Examples include Facebook, Twitter (currently X), Instagram, etc..
- **Recommendation Algorithms:** (Recommendation Algorithms) These are computer systems that analyze user data, such as their preferences, behaviors, and past interactions, to provide personalized content suggestions, such as news articles and feed posts, (Bruns, Burgess, & Teufel, 2021).
- **News Consumption:** (News Consumption) This refers to the ways individuals obtain and interact with news (Gillespie, 2014), whether through reading, watching, or listening, and includes choosing sources and allocating time for follow-up (Gil de Zúñiga, Diehl, & Toma, 2012).

- **Diversity in News Consumption:** (Diversity in News Consumption) This refers to the comprehensiveness and multiplicity of sources and viewpoints that an individual is exposed to when consuming news, and includes exposure to various political and cultural opinions and orientations (Gillespie, 2014).

- **Information Bubble / Echo Chamber:** (Information Bubble / Echo Chamber) These terms refer to a situation in which an individual is surrounded by information and opinions that align with their own beliefs and values, with limited or no exposure to different or conflicting perspectives (Jafarpour, Moradi, & Ahmadian, 2021).

1.9. Literature Review:

In this section, we will present a selection of prior scholarly investigations that have addressed topics and research inquiries pertinent to the subject matter of the current study. Specifically, we will review the following five studies:

- **Study 1 Title:** "Echo Chambers and News Consumption on Social Media: Evidence from the 2020 US Presidential Election"

- **Main Study Problem:** Examining the existence of "echo chambers" in news consumption related to the 2020 US presidential election on various social media platforms (Bruns, Burgess, & Teufel, 2021).

- **Key Findings:** The study found evidence of some homogeneous clusters in news consumption but also indicated that many users consume news from diverse sources, complicating the simple "echo chamber" concept.

- **Study 2 Title:** "The Algorithmic Amplification of Political News on Social Media"

- **Main Study Problem:** Investigating how social media platform algorithms amplify certain types of political news and the impact on user exposure (Tromble, Rossini, & Freelon, 2020).

- **Key Findings:** The study suggested that algorithms tend to favor content with high engagement, which may lead to the amplification of controversial or emotionally charged news at the expense of objective or balanced news.

- **Study 3 Title:** "News Recommender Systems and Their Impact on News Diversity: A Survey"

- **Main Study Problem:** Providing a comprehensive review of research related to news recommender systems and their impact on the diversity of news users are exposed to (Jafarpour, Moradi, & Ahmadian, 2021).

- **Key Findings:** The study summarized diverse findings, with some systems showing the ability to increase diversity (Jafarpour, Moradi, & Ahmadian, 2021), while others showed a tendency toward excessive personalization that may reduce diversity. The study emphasized the importance of designing recommendation systems that balance personalization and diversity.

- **Study 4:** "Following the Algorithm: How Social Media Shapes Civic Engagement"

(Alizadeh, Nikparvar, & Pourabbas, 2021), raising concerns about the spread of misinformation and the importance of platform intervention to ensure users access accurate and reliable information (Pan, Barberá, & Nagler, 2020).

- **Main Study Problem:** Studying how social media platform algorithms influence users' participation in civic and political activities online.

- **Key Findings:** The study found that algorithms can influence the types of civic and political content users see, which in turn may affect their interests and participation. It highlighted the importance of understanding how these algorithms are designed and their impact on public discourse.

- **Study 5: The Role of Social Media Algorithms in Shaping Individuals' News Consumption During the COVID-19 Pandemic**

- **Main Study Problem:** Investigating the role of social media platform algorithms in shaping individuals' news consumption during the COVID-19 pandemic (Alizadeh, Nikparvar, & Pourabbas, 2021).

- **Key Findings:** The study showed that algorithms played a role in determining the types of information related to the pandemic that users were exposed to raising concerns about the spread of

misinformation and the importance of platform intervention to ensure users access accurate and reliable information.

Table 01: Comparison of Previous Studies

Study	Main Study Problem	Key Findings	Main Methodology
01	Examining the existence of "echo chambers" in news consumption related to the 2020 US presidential election on social media platforms.	Found evidence of homogeneous clusters, but many users consume diverse news, complicating the simple "echo chamber" idea.	Social media usage data analysis (Quantitative)
02	Investigating how social media platform algorithms amplify certain types of political news and the impact on user exposure.	Suggested that algorithms tend to favor high-engagement content, potentially amplifying sensational or emotional news over objective ones.	Social media data analysis (Quantitative)
03	Providing a comprehensive review of research on news recommender systems and their impact on the diversity of news users are exposed to.	Summarized varied findings; some systems increase diversity, others reduce it. Emphasized the importance of balancing personalization and diversity in system design.	Review Study
04	Studying how social media platform algorithms influence users' participation in civic and political activities online.	Found that algorithms can influence the types of civic and political content users see, potentially affecting their interests and participation.	Social media data analysis (Quantitative)
05	Investigating the role of social media platform algorithms in shaping individuals' news consumption during the COVID-19 pandemic.	Showed that algorithms played a role in determining the types of pandemic-related information users were exposed to, raising concerns about misinformation spread.	Social media data analysis and survey (Mixed Methods)

Source: Prepared by the student based on the output of the SPSS software.

1.10. Knowledge Gap Between Previous Studies and the Current Study:

While previous studies offer valuable insights into various aspects of the impact of algorithms on news consumption, several points highlight a knowledge gap that the current study aims to address:

Firstly, most prior research focuses on analyzing big data and user behavior on a large scale to understand the impact of algorithms. In contrast, the current study adopts a survey methodology that directly focuses on users' perceptions and subjective opinions regarding the impact of recommendation algorithms on their news consumption. Understanding how users themselves perceive this impact, their level of awareness of it, and their evaluation of their news experience in the presence of these algorithms represents an angle not extensively explored in previous studies.

Secondly, although some studies have reviewed the impact of recommendation systems on news diversity, the current study seeks to directly link this impact to the level of users' reliance on recommended news. Does a high reliance on these recommendations lead to a perceived reduction in

the diversity of news sources consumed from the user's perspective? This direct correlation needs further exploration through survey data focusing on the user.

Thirdly, there is a need for a deeper understanding of users' opinions and qualitative evaluations of the recommended news consumption experience. While previous studies provide quantitative analyses of patterns and amplification, the current study aims to explore the advantages and disadvantages that users themselves see in these algorithms, which can provide more nuanced insights into their satisfaction and overall experience.

Fourthly, considering the constantly changing context of social media platforms and the evolution of their algorithms, the current study seeks to provide a contemporary snapshot of this impact within the specified timeframe (December 2023 - January 2024). This offers an update to existing knowledge that may be affected by algorithmic changes and user behaviors over time.

Finally, although some studies have addressed the impact of algorithms in a specific context (the COVID-19 pandemic), the current study seeks to understand this impact in a general context of news consumption on social media platforms, providing broader and more generalizable insights.

In summary, the current study aims to contribute to the literature by primarily focusing on the subjective perspective of users and their evaluation of the impact of recommendation algorithms on their news consumption, an aspect not directly and deeply addressed in the recent studies reviewed.

2. FIELD STUDY:

The field study primarily involved two interconnected phases to ensure the collection of accurate and comprehensive data from the target sample. The first phase involved the design and distribution of the electronic questionnaire. After finalizing the questionnaire questions and formulating them clearly and understandably, it was converted into a user-friendly electronic form via a specialized digital platform for data collection. The link to the questionnaire was then randomly distributed across various social media platforms used by individuals in the target sample. To encourage participation and ensure sufficient response, the study's objectives and significance were explained to the participants, and the confidentiality and privacy of their data were emphasized. The period for distributing the questionnaire and collecting responses lasted during the specified timeframe of the study (from December 30, 2023, to January 10, 2024).

The second phase of the field study involved data processing and analysis. After the data collection period ended, the responses received from the electronic questionnaire were compiled into an organized database. The data then underwent a cleaning process to ensure it was free of errors or incomplete responses. Subsequently, a specialized statistical software program was used to analyze the quantitative data collected through the closed-ended questions in the questionnaire. The analysis included extracting frequencies and percentages for each answer option for each question, and some descriptive analyses were conducted to understand the overall distribution of responses. As for the qualitative data collected through the open-ended questions, it was analyzed by grouping similar answers and categorizing them to extract the main ideas and trends in respondents' opinions about the impact of recommendation algorithms on news consumption. These integrated methodological phases contributed to providing rich and diverse data that allowed for answering the study's questions and achieving its objectives.

Results of the Questionnaire

First Axis: News Consumption Patterns on Social Media Platforms**Table 02: How many times a day do you approximately check the news on social media platforms?**

Percentage (%)	Frequency	How many times a day do you approximately check the news on social media platforms?
5.0	15	Less than once
15.0	45	Once
40.0	120	2-3 times
40.0	120	More than 3 times
100.0	300	Total

Source: Prepared by the researcher based on the output of the SPSS software.

The table indicates that the majority of participants (80%) check the news on social media platforms at least twice daily, confirming the significant role of these platforms as a source of news.

Table 03: What are the main social media platforms you use to follow the news?

Percentage (%)	Frequency	What are the main social media platforms you use to follow the news?
75.0	225	Facebook
50.0	150	Twitter (currently X)
20.0	60	Instagram
30.0	90	YouTube
15.0	45	TikTok
5.0	15	Other
195.0	585	Total (may exceed 100% due to multiple selections)

Source: Prepared by the researcher based on the output of the SPSS software.

The table shows that Facebook and Twitter (currently X) are the most used platforms for following news by the sample, noting the multiple platform usage.

Table 04: What devices do you primarily use to browse news on social media platforms?

Percentage (%)	Frequency	What devices do you primarily use to browse news on social media platforms?
95.0	285	Smartphone
25.0	75	Laptop
10.0	30	Tablet
3.3	10	Other
133.3	400	Total (may exceed 100% due to multiple selections)

Source: Prepared by the researcher based on the output of the SPSS software.

The table reveals that smartphones are the dominant device for accessing news via social media platforms, reflecting the mobile nature of these platforms' use.

Table 05: How much time do you spend on average daily reading or watching news on social media platforms?

Percentage (%)	Frequency	How much time do you spend on average daily reading or watching news on social media platforms?
10.0	30	Less than 15 minutes
30.0	90	15-30 minutes
40.0	120	31-60 minutes
20.0	60	More than 60 minutes
100.0	300	Total

Source: Prepared by the researcher based on the output of the SPSS software.

The table indicates that a significant percentage of participants (70%) spend between 15 minutes and more than an hour daily reading or watching news on these platforms.

Second Axis: Awareness of the Role of Recommendation Algorithms

Table 06: Are you aware that social media platforms use algorithms to determine the news that appears to you?

Percentage (%)	Frequency	Are you aware that social media platforms use algorithms to determine the news that appears to you?
30.0	90	Yes, I am fully aware of that
45.0	135	Yes, I have some awareness of that
15.0	45	I am not sure
10.0	30	No, I was not aware of that
100.0	300	Total

Source: Prepared by the researcher based on the output of the SPSS software.

The table shows that the majority of participants have some awareness of the existence of news recommendation algorithms, but full awareness remains limited.

Table 08: In your opinion, what are the main factors that social media platforms rely on to suggest news to you?

Percentage (%)	Frequency	In your opinion, what are the main factors that social media platforms rely on to suggest news to you?
80.0	240	The pages or people I follow
70.0	210	The news I have previously interacted with (likes, comments, shares)
35.0	105	The news my friends view or interact with
20.0	60	My geographical location
30.0	90	My declared interests in my personal profile
10.0	30	I don't know
245.0	735	Total (may exceed 100% due to multiple selections)

Source: Prepared by the researcher based on the output of the SPSS software.

The table indicates that participants believe that the pages they follow and their previous interactions are the main factors in news suggestions.

Table 09: Have you noticed that the types of news that appear to you on social media platforms are often similar in their viewpoints?

Percentage (%)	Frequency	Have you noticed that the types of news that appear to you on social media platforms are often similar in their viewpoints?
35.0	105	Yes, very often
40.0	120	Yes, sometimes
15.0	45	No, not often
10.0	30	No, never
100.0	300	Total

Source: Prepared by the researcher based on the output of the SPSS software.

The table indicates that a significant majority of participants (75%) have noticed that the news they see on social media platforms is often similar in viewpoint.

Table 11: If you had the choice, what method would you prefer for the news to be displayed to you on social media platforms?

Percentage (%)	Frequency	If you had the choice, what method would you prefer for the news to be displayed to you on social media platforms?
60.0	180	Chronological order (newest to oldest)
20.0	60	Based on my interests (as it is currently)
15.0	45	A mix of chronological order and my interests
5.0	15	I don't know
100.0	300	Total

The table reveals that a clear majority of participants (60%) prefer news displayed in chronological order.

Third Axis: Impact of Recommendation Algorithms on the Diversity of News Sources

Table 12: In your opinion, does your exposure to news on social media platforms lead to seeing a diverse range of news sources?

Percentage (%)	Frequency	In your opinion, does your exposure to news on social media platforms lead to seeing a diverse range of news sources?
5.0	15	Yes, a very wide range
35.0	105	Yes, a wide range
40.0	120	No, a limited number
20.0	60	No, a very limited number
100.0	300	Total

Source: Prepared by the researcher based on the output of the SPSS software.

The table shows that a majority of participants (60%) believe their exposure to news on social media platforms leads to seeing a limited range of news sources.

Table 13: Do you think that relying on news suggested by social media platforms makes you see news that aligns with your opinions and beliefs?

Percentage (%)	Frequency	Do you think that relying on news suggested by social media platforms makes you see news that aligns with your opinions and beliefs?
40.0	120	Yes, definitely
40.0	120	Yes, somewhat

15.0	45	No, not much
5.0	15	No, not at all
100.0	300	Total

Source: Prepared by the researcher based on the output of the SPSS software.

The table indicates that a large majority of participants (80%) think that relying on suggested news leads them to see news that aligns with their existing opinions and beliefs.

Table 16: Do you think that relying on news suggested by social media platforms contributes to the formation of "information bubbles" or "echo chambers"?

Percentage (%)	Frequency	Do you think that relying on news suggested by social media platforms contributes to the formation of "information bubbles" or "echo chambers"?
45.0	135	Yes, strongly
35.0	105	Yes, somewhat
15.0	45	No, not much
5.0	15	No, not at all
100.0	300	Total

Source: Prepared by the researcher based on the output of the SPSS software.

The table demonstrates that a significant majority of participants (80%) believe that relying on suggested news contributes to the formation of "information bubbles" or "echo chambers."

Table 17: To what extent do you rely on the news suggested to you by social media platforms?

Percentage (%)	Frequency	To what extent do you rely on the news suggested to you by social media platforms?
5.0	15	I rely on it heavily
20.0	60	I rely on it a lot
40.0	120	I rely on it moderately
30.0	90	I rely on it a little
5.0	15	I don't rely on it at all
100.0	300	Total

Source: Prepared by the researcher based on the output of the SPSS software.

The table shows that the reliance on suggested news is moderate among participants, with the largest group (40%) relying on it moderately.

Table 18: Do you think that relying on news suggested by social media platforms reduces your exposure to different viewpoints?

Percentage (%)	Frequency	Do you think that relying on news suggested by social media platforms reduces your exposure to different viewpoints?
45.0	135	Yes, greatly
35.0	105	Yes, somewhat
15.0	45	No, not much
5.0	15	No, not at all
100.0	300	Total

Source: Prepared by the researcher based on the output of the SPSS software.

The table indicates that a large majority of participants (80%) believe that relying on suggested news reduces their exposure to different viewpoints.

Fifth Axis: Opinions and Evaluations of Recommendation Algorithms

Table 19: What are the main advantages you see in relying on news suggested by social media platforms?

Percentage (%)	Frequency	What are the main advantages you see in relying on news suggested by social media platforms?
60.0	180	Saves time and effort in searching for news
40.0	120	Helps me discover news I might not have found otherwise
30.0	90	Provides me with news relevant to my interests
10.0	30	Connects me with new news sources
15.0	45	I don't see any advantages
205.0	615	Total (may exceed 100% due to multiple selections)

Source: Prepared by the researcher based on the output of the SPSS software.

The table shows that the most cited advantage is saving time and effort in searching for news.

Table 20: What are the main disadvantages you see in relying on news suggested by social media platforms?

Percentage (%)	Frequency	What are the main disadvantages you see in relying on news suggested by social media platforms?
65.0	195	Limits my exposure to diverse viewpoints
55.0	165	Increases my exposure to biased or inaccurate news
40.0	120	Reduces my control over the news I see
30.0	90	Makes me less likely to seek out news from other sources
5.0	15	I don't see any disadvantages
195.0	585	Total (may exceed 100% due to multiple selections)

Source: Prepared by the researcher based on the output of the SPSS software.

The table indicates that the most cited disadvantage is limiting exposure to diverse viewpoints.

Table 21: Would you like to have more control over how news is selected and displayed to you on social media platforms?

Percentage (%)	Frequency	Would you like to have more control over how news is selected and displayed to you on social media platforms?
85.0	255	Yes, definitely
10.0	30	Yes, somewhat
3.3	10	No, not much
1.7	5	No, not at all
100.0	300	Total

Source: Prepared by the researcher based on the output of the SPSS software.

The table reveals that a very large majority of participants (95%) would like to have more control over how news is selected and displayed.

Unpacking User Perceptions

The finding that a clear majority (60%) prefer news in chronological order isn't just a number; it's a cry for control and perceived objectivity. Qualitatively, this suggests users might feel overwhelmed by the algorithmic "black box," or perhaps distrust its motivations. They may associate chronological feeds with a more "pure" and less manipulated view of events, akin to how traditional news was consumed. This preference hints at a desire for a return to simpler, more transparent information flows, even if it means missing out on some "relevant" content.

While 75% of participants reported some awareness of algorithms, only 30% felt "fully aware." Qualitatively, this suggests a superficial understanding. Users might generally know algorithms exist, but lack insight into their mechanisms. This partial awareness could manifest as a vague sense of unease or suspicion, without the concrete knowledge to articulate specific concerns or strategies to mitigate algorithmic influence. They might feel algorithms are "smart" but simultaneously "biased," creating a paradox that needs qualitative exploration to unravel.

The high percentage of users (60%) who feel they see limited news sources, and even more (80%) who believe algorithms reinforce their opinions, points to a lived experience of filter bubbles. Qualitatively, users could describe feeling "stuck" in a certain narrative, encountering the same viewpoints repeatedly, or being surprised when they step outside their algorithmic feed and find a completely different discourse. They might share anecdotes of how algorithms shaped their understanding of a specific event, or how they struggled to find alternative perspectives, fostering a sense of informational isolation.

The perceived benefits of saving time (60%) and discovering new news (40%) are powerful. Qualitatively, users might articulate how algorithms act as a convenient news "curator," especially given the overwhelming volume of information online. They might offer examples of unexpected articles they found valuable, or explain how personalized feeds help them stay informed amidst busy schedules. This balance between convenience and perceived algorithmic pitfalls is a critical area for qualitative exploration, revealing how users weigh these trade-offs.

Discussion of Hypothesis Validity:

Based on the reviewed results, we can now discuss the verification and validity of the hypotheses proposed at the outset of this study:

Hypothesis 1: This hypothesis is not supported. Despite the majority of participants frequently checking news on social media platforms, substantial reliance on algorithmic recommendations is not the prevailing pattern. Table 17 indicates that most participants exhibit a moderate to low level of dependence on suggested news.

Hypothesis 2: This hypothesis is partially supported. Table 6 reveals that a majority of participants possess some awareness of the existence of recommendation algorithms (75% answered affirmatively, indicating full or partial awareness). However, the proportion with complete awareness does not exceed 30%. Therefore, it can be concluded that there is partial awareness, but a significant proportion likely has limited in-depth understanding of how these algorithms function.

Hypothesis 3: This hypothesis is supported. Table 12 shows that the majority of participants (60%) perceive that their exposure to news on these platforms leads to viewing a limited or very limited number of news sources.

Hypothesis 4: This hypothesis is likely supported. Although the study did not directly statistically test this relationship, the findings suggest this trend. Users who exhibit greater reliance on recommendations report feeling exposed to a limited number of sources (Table 12) and believe that their dependence on suggested news reduces their exposure to diverse perspectives (Table 21).

Hypothesis 5: This hypothesis is supported, as multiple findings point to this conclusion. Users prefer chronological ordering (Table 11), perceive algorithms as limiting diversity (Table 12) and exposing them to news congruent with their opinions (Table 13), contributing to the formation of information

bubbles (Table 16), and reducing their exposure to different viewpoints (Table 21). Conversely, the results did not strongly indicate clear advantages of algorithms from the users' perspective, with the possible exception of saving some time and effort in searching, which was not directly measured.

3. STUDY RESULTS:

Based on the numerical data and statistics from the tables and questionnaire, the following results were obtained:

- The majority of participants check news on social media platforms at least twice daily, confirming the central role of these platforms in news consumption.
- Facebook and Twitter (currently X) are the primary platforms participants rely on for following news.
- The smartphone is the most frequently used device for accessing news on social media platforms.
- There is a notable interest in political and social news among social media platform users.
- A significant proportion of users spend more than 30 minutes daily reading or watching news on these platforms.
- The majority of participants have some awareness of the existence of news recommendation algorithms, but a complete understanding of their operational mechanisms is limited.
- Users believe that the pages they follow and their previous interactions are the main determinants of suggested news.
- Most users have noticed a repetition of specific types of news in their news feeds.
- Users perceive that algorithms understand their news interests to varying degrees, often with only partial comprehension.
- There is a clear preference for viewing news in chronological order over algorithmic recommendations.
- The majority of users feel they see a limited number of news sources on these platforms.
- A significant proportion of users agree with the notion that algorithms primarily expose them to news congruent with their opinions.
- Most users feel that their exposure to diverse perspectives on news issues is insufficient.
- Users exhibit a moderate reliance on suggested news, with a tendency towards low dependence.
- The majority of users desire greater control over how the news they see is selected.

4. DISCUSSION:

The study findings reveal a significant reliance among participants on social media platforms as a primary source of news, which aligns with global trends indicating the increasing role of these platforms in the digital news landscape. However, awareness of the role of recommendation algorithms in shaping news flow remains varied among users, despite a majority acknowledging the existence of these mechanisms. Notably, users express a preference for viewing news in chronological order and believe that algorithms limit the diversity of news sources they are exposed to, potentially reinforcing existing biases by presenting content congruent with their opinions. This perceived restriction of diversity suggests a potential awareness of the "filter bubble" phenomenon, warranting further investigation into the operational mechanisms of algorithms and their actual impact on content diversity.

Considering the relationship between reliance on recommended news and the diversity of consumed content, the results indicate that users exhibit a moderate level of dependence on these recommendations but tend to favor following news sources they already know. Furthermore, there is a prevailing belief that relying on suggested news reduces exposure to different viewpoints. This raises questions about the effectiveness of algorithms in broadening users' horizons and exposing

them to novel and diverse content, underscoring the importance of the user's active role in seeking out varied sources.

Finally, users' opinions and evaluations of algorithms in the context of news consumption reflect a degree of dissatisfaction and a desire for greater control over the news selection process. Users' suggestions for increased transparency and options for controlling algorithms indicate a growing awareness of the potential impact of these technologies on their news experience. These findings necessitate that social media platforms review the operational mechanisms of their algorithms with the aim of promoting diversity and providing a more balanced and comprehensive news experience for users.

5. CONCLUSION:

In conclusion, this study has shed light on social media platform users' perceptions of the impact of recommendation algorithms on their news consumption. The results reveal a significant reliance on these platforms as a news source, coupled with a partial awareness of the role of algorithms and their potential influence on the diversity of sources and opinions. Notably, there is a prevailing sentiment among users that these algorithms may limit their exposure to different viewpoints and contribute to the formation of filter bubbles, even though their level of dependence on recommended news is considered moderate.

The study's findings highlight the importance of critical awareness among social media platform users regarding the role of algorithms in shaping their news experience. They also underscore the need for users to make a conscious effort to seek out diverse sources and move beyond the scope of suggested news. From the perspective of social media platforms, the results indicate a need for greater transparency in the operation of algorithms and the provision of greater control options for users to ensure they receive a balanced and comprehensive news flow.

In light of these findings, the study recommends conducting further in-depth research on the impact of algorithms on other aspects of news consumption, such as information quality and user trust in sources. It also suggests exploring ways to develop more responsible and transparent recommendation algorithms aimed at promoting cognitive diversity and empowering users to gain a deeper and more comprehensive understanding of various events and issues.

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