Impact of algorithms on information consumption, especially in social media environments

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Introduction

- Algorithms performed by machines and
- Processes and sets of rules in the modern world too complicated for people understand
- Users of social media, and their digital behaviour part of the algorithms running the digital

Psychological aspects

- Social media as important source of informations
- As the usage of social networks increased
  → abuse of media to spread misinformations & disinformation also increased
- Spread of misinformation as result of a cognitive process by users
- Consistency of message
- Coherency of message
- Credibility of source
- General acceptability

(Sources: Kumar/Geethakumari, 2014)

Psychological aspects

1. Confirmation bias
2. Partisian bias
3. Motivated bias
4. Backfire bias
5. Group polarization
6. Emotional contagion
7. False news value effect

- Can lead to hardening of existing attitudes
- Effects unfold stronger effects on average than in offline settings
- Increasing social polarization
- Increasing fragmentation of the public sphere

Sociological and Technical aspects

- One of more definitions: A movement that aims to impose a new collective order based on total certainty
- Content is provided with anticipation of user's likes and dislikes

(Sources: Zuboff, 2019; Head/Fister/MacMilla, 2020)

Security aspects

- Concerns about the security of algorithms
- Major security issues of algorithms
- Reflecting and amplifying social biases
  - Collecting, storing and processing large amounts of personal data
  - Using algorithms may result in a concentration of decision-making authority and a lack of accountability and transparency
- Creation of ethical and responsible algorithms that consider privacy, data ownership, and control
  - Social media algorithms
    -> Must be developed in an ethical and responsible manner
    -> Security is a key component of their design and use

Economical aspects

- Monetisation of personal information
- Advertisement -important revenue source- firms and companies
- Terms and conditions of websites
- The Cambridge Analytica Scandal
- Secrecy of Algorithms
- Coorperate Lobbying

(Sources: Amnesty International, 2019; Ifeanyi, 2020; Hilbert, 2013)

Politicals aspects

- Big techs harvest personal information
- Microtargeting
- Violation of the Right to privacy and Freedom of thought and expression
- Political polarization, hate speech
- Ad libraries: Storage for ad data, including client info, content, distribution, and moderation.
- Google's ad library contains data on content, audience, cost, and impressions.
- TikTok's HypeHouses
- General Data Protection Regulation (GDPR) - EU; Publicly accessible registry - Canada, UK
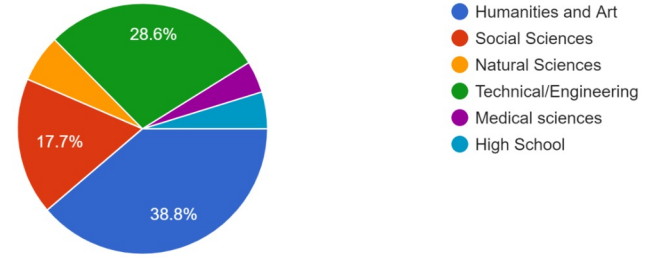
Survey

- Student population
- Questions: 20
- Responses: 147
- Countries:
  - India: 57
  - Bosnia and Herzegovina (54)
  - Poland (21)
  - Germany (9)
  - Other (6)
- Age groups:
  - Born before 1990 (3)
  - Born between 1990 and 1999 (41)
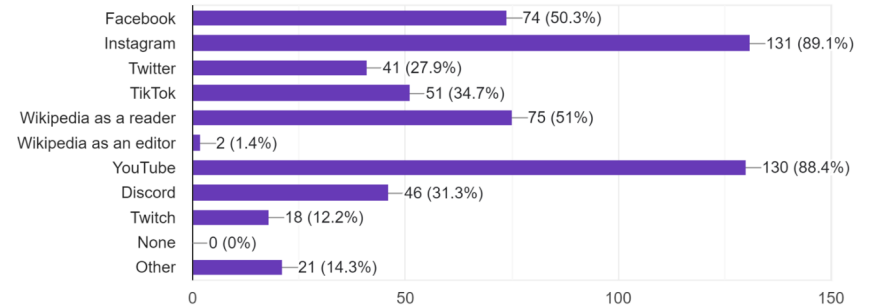 - Born after 1999 (103)

Survey

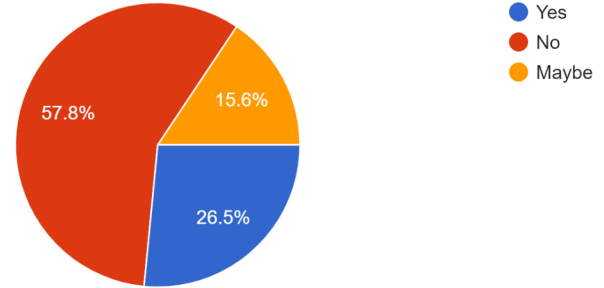**Major field of study (finished or current)**
147 responses

- Humanities and Art
- Social Sciences
- Natural Sciences
- Technical/Engineering
- Medical sciences
- High School

28.6%
17.7%
38.8%

What Social Media do you use?
147 responses

Facebook	74 (50.3%)
Instagram	131 (89.1%)
Twitter	41 (27.9%)
TikTok	51 (34.7%)
Wikipedia as a reader	75 (51%)
Wikipedia as an editor	2 (1.4%)
YouTube	130 (88.4%)
Discord	46 (31.3%)
Twitch	18 (12.2%)
None	0 (0%)
Other	21 (14.3%)

Survey

Are you aware of the term echo-chamber?

147 responses

- Yes
- No
- Maybe

57.8%

15.6%

26.5%

Do you read the terms and conditions of social media platforms before accepting them?

147 responses

- Yes
- No
- No, but I research about some parts of it

36.1%

47.6%

16.3%
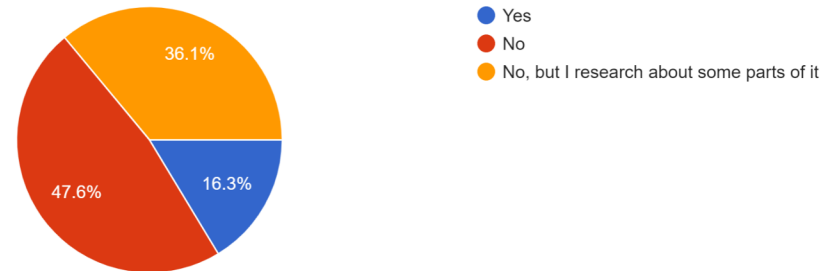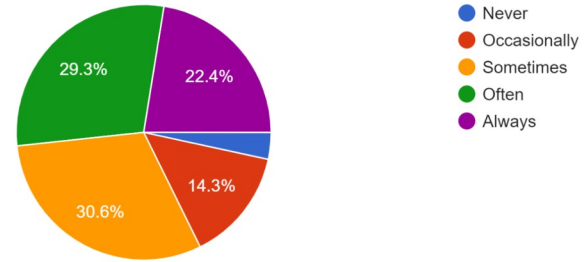
Survey
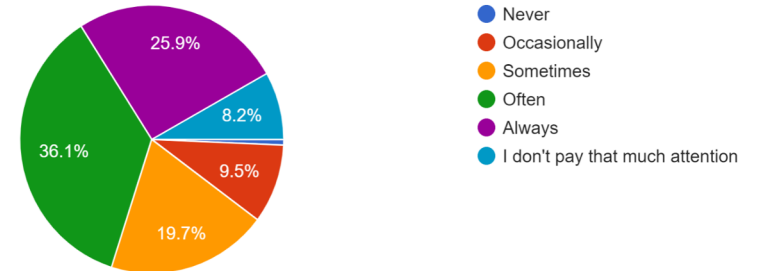
How often do you feel that you are spending more time on social media than you originally intend to?

147 responses

- Never
- Occasionally
- Sometimes
- Often
- Always

29.3% | 22.4% | 30.6% | 14.3%

How often do you see "Suggested for you" type of content?   Content you haven't followed, but which is recommended to you by the algorithm.
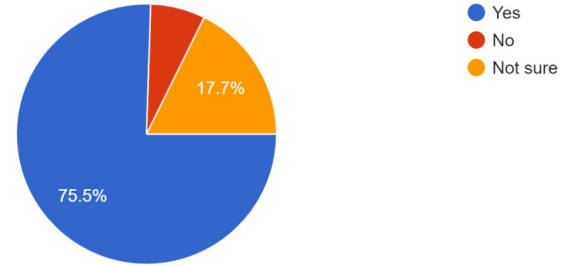
147 responses

- Never
- Occasionally
- Sometimes
- Often
- Always
- I don't pay that much attention

25.9% | 8.2% | 36.1% | 9.5% | 19.7%

Survey

Do you believe countries should try to do more in regulating social media companies and protect the privacy of its citizens?

147 responses

- Yes
- No
- Not sure

75.5%
17.7%

During election periods, do you feel like political ads cannot be escaped?

147 responses

- Yes
- No
- Maybe

58.5%
17.7%
23.8%
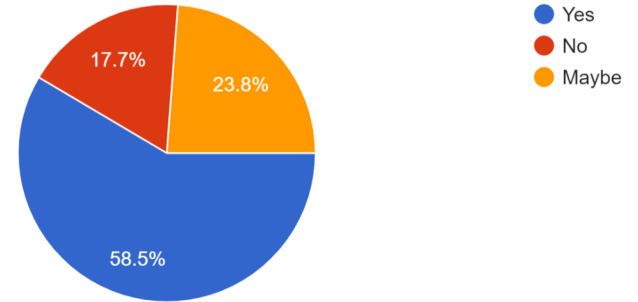
Analysis and Interpretation

- Term echo chamber not well known
- Most students are aware of algorithms and data collection
- 36% respondents researched important parts about terms and conditions.
- Political advertisements -across countries
- Social media regulations- 75.5% want government to step up against the tech companies ; protect the privacy of citizens
- Addictive nature of platforms
- „Suggested for you content" - content more based on the algorithm's predictions, less on people's conscious choices

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