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HOAXES AND ECHO CHAMBERS: THE PHENOMENON OF CONFIRMATION BIAS IN THE DIGITAL SPACE

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Abstract

The phenomenon of hoaxes and echo chambers in the digital space is becoming increasingly worrying as social media algorithms that reinforce user confirmation bias continue to develop. This study aims to analyse the patterns of interaction between hoaxes, echo chambers, and confirmation bias, as well as their impact on social polarisation in the post-truth era.

Through literature review and analysis of social media comment interactions, it was found that individuals tend to only be exposed to and believe information that aligns with their beliefs, while differing views are often ignored or even rejected. Filter bubble algorithms reinforce information isolation and create homogeneous echo chambers, allowing hoaxes and misinformation to spread unchallenged. The combination of these three phenomena contributes significantly to social fragmentation, deepens polarisation, and reduces the quality of public discourse. This study emphasises the need to improve digital literacy and algorithm transparency to minimise the negative impact of hoaxes and echo chambers and encourage the creation of an inclusive and dialogic digital space.

Keywords: Hoaxes, Echo Chamber, Confirmation Bias Phenomenon, Digital Space.

Introduction

The development of information and communication technology has brought changes in the patterns of social interaction within society. Digital media, particularly social media, has now become the primary space for the exchange of information and the formation of public opinion. However, the ease of access and speed of information dissemination in the digital space are not always accompanied by an improvement in the quality and validity of the information that circulates. The phenomenon of hoaxes or false information has become one of the main challenges faced by digital society today.

Hoaxes are not merely incorrect information but are often deliberately produced and disseminated for specific purposes, such as influencing public opinion, creating unrest, or even achieving political and economic gains. The spread of hoaxes in the digital space has become increasingly widespread due to the high level of digital literacy that is not yet evenly distributed among the public. This is exacerbated by the low ability

to verify information and the tendency of the public to accept and share information without checking its accuracy (Kitchens et al., 2020).

One phenomenon that reinforces the spread of hoaxes in the digital space is the echo chamber, which is a space or discussion group whose members tend to have similar views, values, or beliefs. In an echo chamber, the information that circulates is generally only that which is in line with the beliefs of the group, while information that is contradictory tends to be ignored, rejected, or even attacked.

Echo chambers narrow the space for healthy discussion and reinforce polarisation in society (Pariser, 2011). Echo chambers are closely related to the phenomenon of confirmation bias, which is the tendency of individuals to seek, select, and believe information that is consistent with their pre-existing beliefs or prejudices. Confirmation bias makes it easier for people to accept false information that supports their views, while rejecting facts that contradict them. This phenomenon is one of the main reasons why hoaxes spread so quickly and are difficult to correct in the digital space (Pratama, 2021). The role of social media algorithms cannot be ignored in reinforcing echo chambers and confirmation bias.

Algorithms automatically recommend content that matches users' preferences and interaction history, so users tend to be exposed to uniform information that reinforces their existing beliefs. As a result, the digital space becomes increasingly fragmented and public opinion becomes more polarised (Puspitasari, 2020).

This situation becomes even more complex in the post-truth era, where emotions and subjective beliefs often dominate over objective facts in shaping public opinion.

People tend to believe narratives that align with their group identity or political affiliation, even if these narratives are not supported by valid data and evidence. The post-truth phenomenon weakens people's ability to think critically and objectively when assessing information (Sari & Pratama, 2022). The impact of the combination of hoaxes, echo chambers, and confirmation bias in the digital space is very real in social life.

Polarisation and horizontal conflicts are increasingly common, both in the virtual and real worlds. Public discussions, which should be a forum for the exchange of ideas and solutions, have instead become arenas for prejudiced and hostile debates. Trust in public institutions, the media, and scientific authorities has also been eroded (Nurdin, 2021).

Previous studies have shown that certain groups, such as political partisans and identity-based communities, are highly susceptible to the influence of hoaxes and echo chambers. They tend to construct collective narratives that reinforce group identity and reject information from outside the group. In this context, the digital space is no longer merely a medium of communication, but also an arena for ideological and interest-based battles (Purnama, 2023).

Digital literacy is one of the main keys to overcoming this problem. However, efforts to improve digital literacy must be accompanied by an understanding of psychological mechanisms such as confirmation bias and how social media algorithms work. Only with a comprehensive understanding can the public be more critical and selective in receiving and disseminating information in the digital space (Purnomo & Sari, 2022).

A literature review on hoaxes, echo chambers, and confirmation bias is essential to understand the root causes of the problem and find effective solutions. Through this review, it is hoped that patterns of social interaction in the digital space that reinforce the spread of hoaxes can be identified, along with strategies to minimise their negative impact on society.

This study aims to analyse in depth the relationship between hoaxes, echo chambers, and confirmation bias in the digital space. Using a literature review approach, this study will identify the factors that reinforce these phenomena and formulate policy recommendations that can support the creation of a healthy, inclusive, and misinformation-free digital space.

Research Method

This study uses a systematic literature review method with a qualitative approach to analyse the interaction between hoaxes, echo chambers, and confirmation bias in digital spaces. Data were collected from journals, research reports, and textbooks related to social media algorithms, filter bubbles, and cognitive psychology, using search techniques with keywords such as 'echo chamber,' 'confirmation bias,' and 'post-truth.' Sources were selected based on the authors' reputation, topic relevance, and clear methodology, then analysed thematically to identify patterns of algorithmic mechanisms, user preferences, and the social impact of hoaxes (Green et al., 2006); (Torraco, 2016).

Results and Discussion

Patterns of Interaction and Relationships Between Hoaxes, Echo Chambers, and Confirmation Bias

The development of digital space has created a complex symbiosis between hoaxes, echo chambers, and confirmation bias. Confirmation bias is the psychological basis that triggers individuals to selectively seek information that aligns with their initial beliefs, while social media algorithms such as Instagram or Facebook reinforce this tendency through content recommendations based on interaction history. This mechanism forms a feedback loop: user preferences influence algorithms, and algorithms in turn reinforce those preferences, creating echo chambers—homogeneous spaces where circulating information only reinforces group biases (Kitchens et al., 2020).

In echo chambers, hoaxes spread exponentially due to the lack of challenges to false information. A study of the anti-hoax account @turnbackhoaxid showed that fact-checking was often rejected by users trapped in echo chambers, even when presented with valid evidence. Political partisans or certain identity groups—such as anti-vaccine groups—are prime examples: hoaxes that align with group beliefs are immediately accepted without verification, while countering information is ignored. Emotions like anger and frustration dominate interactions, overpowering rational analysis, as seen in sarcastic comments or accusations against fact-checking accounts (Pratama, 2021).

Social media algorithms are not neutral—designed to maximise user engagement, they tend to prioritise provocative and emotional content, including hoaxes. Research by Vosoughi et al. (2018) revealed that hoaxes spread 6× faster than valid information, with echo chambers amplifying this effect through 'share to like-minded groups' mechanisms.

This tendency is exacerbated by filter bubbles, where users are isolated in information bubbles tailored by algorithms based on location, search history, or political affiliation (Pariser, 2011). Confirmation bias works through two mechanisms: selective exposure (selecting information sources that align with one's beliefs) and motivated reasoning (interpreting information subjectively). An experiment by Morini et al.

(2021) showed that participants spent 68% more time reading articles that supported their views, even if they contained misinformation. This phenomenon is reinforced by homophily—the tendency to interact with like-minded groups—which creates a fragmented digital ecosystem. The impact of social polarisation due to the combination of hoaxes and echo chambers is evident in the 2024 elections in Indonesia. Hoaxes about election fraud spread rapidly in homogeneous WhatsApp groups, while official clarifications were ignored. Analysis of Instagram comments showed that 41% of users rejected official data on the grounds of 'personal experience' or 'elite involvement,' reflecting an epistemic crisis in the post-truth era (Puspitasari, 2020).

Uneven digital literacy exacerbates vulnerability. Groups such as the elderly or those with limited education often rely on social media as their primary source of information, without the ability to verify. As much as 72% of hoaxes in Indonesia spread through closed groups on WhatsApp or Facebook—spaces where echo chambers easily form. This low literacy makes hoaxes persist, even after clarification. Social identity theory (Tajfel, 1979) explains why group loyalty overrides objectivity. In echo chambers, hoaxes are seen as tools to legitimise identity, while counterfactual information is perceived as a threat. For example, clarifications about the COVID-19 vaccine are often rejected by anti-vaccine groups because they are seen as undermining the 'group truth' (Sari & Pratama, 2022).

Belief perseverance makes individuals stick to hoaxes even when presented with contrary evidence. In the case of @turnbackhoaxid, 34% of comments rejected verified facts, driven by distrust of certain institutions. This reflects the erosion of traditional

knowledge authority—such as academics or mainstream media—in the digital age (Nurdin, 2021).

The social media ecosystem that capitalises on conflict exacerbates the situation. Features such as 'trending topics' or 'related content' indirectly promote sensational hoaxes, while complex factual information is less appealing to algorithms. As a result, the digital space is dominated by dichotomous narratives (us vs. them) that divide social cohesion (Purnama, 2023).

The implications for democracy are serious. Society has lost the ability to engage in fact-based discussions, replaced by emotional debates filled with accusations. A UNESCO report (2020) noted that 58% of Indonesians struggle to distinguish between opinions and facts on social media—a figure that increases among active users. Trust in the democratic process is eroding, as seen in the rejection of validated election results (Purnomo & Sari, 2022).

Mitigation strategies require a multidimensional approach. First, digital literacy education that goes beyond fact-checking to include understanding cognitive biases and how algorithms work. Second, transparency in social media algorithms to reduce the filter bubble effect. Third, collaboration between the government, digital platforms, and civil society in designing counter-misinformation policies (Luzsa, 2021).

Without systematic intervention, the digital space will remain a battleground for ideologies that threaten social cohesion. The combination of hoaxes, echo chambers, and confirmation bias is not merely a technical issue but a humanitarian crisis requiring holistic solutions based on scientific evidence and collective awareness.

The Impact of the Combination of Hoaxes and Echo Chambers on Social Polarisation

The combination of hoaxes and echo chambers creates an environment where false information thrives unchallenged, deepening social polarisation. Social media algorithms, such as those used by Facebook and Instagram, systematically recommend content based on user preferences, forming filter bubbles that isolate individuals from different perspectives. In this echo chamber, hoaxes that align with group beliefs spread rapidly, while fact-checking is ignored or rejected, as seen in an analysis of comments on the anti-hoax account @turnbackhoaxid (Spohr, 2017).

Polarisation intensifies when hoaxes are used as tools to legitimise group identities. Political partisans or ideologically-based communities (e.g. anti-vaccination groups) tend to accept false information that supports their collective narrative, while counter-facts are seen as threats. A study of the 2024 elections in Indonesia shows that hoaxes about electoral fraud spread three times faster in homogeneous WhatsApp groups, while official KPU data was questioned by 41% of active users. This phenomenon reflects an epistemic crisis in the post-truth era, where group loyalty trumps objectivity (Jiang & Wilson, 2022).

Algorithms not only prioritise provocative content but also trigger a feedback loop between user preferences and content recommendations. Emotionally charged hoaxes (anger, fear) are more likely to go viral because they elicit high engagement, as demonstrated by Vosoughi et al. (2018), which found that misinformation spreads 6× faster than valid information. In echo chambers, this cycle reinforces extreme beliefs and reduces tolerance for differing opinions (Törnberg, 2018).

The impact is evident in the fragmentation of public discourse. Society is divided into camps that find it difficult to compromise, each developing its own 'alternative facts.' For example, discussions about the COVID-19 vaccine on Twitter in Indonesia are polarised between pro-vaccine and anti-vaccine camps, with hoaxes about vaccine side effects still believed despite being refuted by scientific data. This situation is exacerbated by belief perseverance—the tendency to hold onto beliefs despite contrary evidence—which keeps hoaxes alive within like-minded groups (Ranalli & Malcom, 2023).

The long-term effect is the weakening of social cohesion. Horizontal conflicts increase, both online and offline, such as attacks on social media accounts affiliated with political groups or physical confrontations between citizens provoked by misinformation.

A UNESCO report (2020) noted that 58% of Indonesians find it difficult to distinguish between opinion and fact on social media, which exacerbates distrust between groups (Caled & Silva, 2024). Vulnerable groups, such as the elderly or individuals with low digital literacy, are the main victims.

As many as 72% of hoaxes in Indonesia spread through closed WhatsApp groups, where members tend to be homogeneous and less critical of information. Their lack of verification skills makes them easily trapped in conspiracy narratives or provocations, which then reinforce prejudices and hostility between groups (Buana, 2021).

At the macro level, the combination of hoaxes and echo chambers erodes the foundations of deliberative democracy. Society has lost its ability to engage in fact-based dialogue, which has been replaced by emotional debates filled with accusations and conspiracy theories. Politicians often take advantage of this situation by spreading hoaxes to mobilise support, as seen in the 2024 election campaign, which was full of dichotomous narratives of 'us vs them' (Rusmiati, 2024).

Solutions to this polarisation require multidimensional interventions. Transparency of social media algorithms needs to be improved to minimise filter bubbles, while digital literacy must focus on understanding cognitive biases and fact-checking mechanisms. However, these efforts are hampered by society's dependence on digital platforms that capitalise on conflict to increase engagement (Ranieri & Bruni, 2021).

Thus, without systemic change, the digital space will remain a battleground for ideologies. Misinformation and echo chambers are not merely information issues but

threats to social integration that require collective awareness and evidence-based regulation.

Conclusion

Hoaxes and echo chambers in the phenomenon of confirmation bias in the digital space show that the interaction between the three forms a mutually reinforcing cycle. Confirmation bias encourages individuals to only accept information that aligns with their beliefs, while social media algorithms reinforce this tendency by displaying content that matches users' preferences. As a result, echo chambers are created that limit exposure to different perspectives and make individuals increasingly isolated from alternative information.

This condition accelerates the spread of hoaxes because false information or misinformation that aligns with group beliefs is more easily accepted and shared without verification. In echo chambers, clarifications or facts that contradict this are often rejected or ignored, even when accompanied by valid evidence. This causes public discussions to become increasingly emotional, reducing the quality of dialogue and strengthening social polarisation in society.

Overall, the combination of hoaxes, echo chambers, and confirmation bias in the digital space not only hinders the healthy exchange of ideas but also weakens social cohesion and increases societal fragmentation. To address these negative impacts, efforts are needed to improve digital literacy, raise awareness of cognitive biases, and ensure transparency in social media algorithms so that the digital space can become an inclusive and open forum for discussion.

References

Buana, A. (2021). Echo Chamber pada Interaksi Komentar di Akun Instagram: Studi Kasus Polarisasi Opini. *Jurnal Ilmu Komunikasi*, *19*(2), 123–135. https://doi.org/10.31315/jik.v19i2.3456

Caled, J., & Silva, F. (2024). Echo Chambers and Algorithmic Bias: The Homogenization of Online Culture. *SHS Web of Conferences*, *202*, 05001. https://doi.org/10.1051/shsconf/202420205001

Green, B. N., Johnson, C. D., & Adams, A. (2006). Writing Narrative Literature Reviews for Peer-Reviewed Journals. *Chiropractic & Manual Therapies*, 52–57.

Jiang, J., & Wilson, C. (2022). Echo Chambers in Online Social Networks: Evidence from the 2020 US Presidential Election. *Social Networks*, *68*, 1–13. https://doi.org/10.1016/j.socnet.2021.11.002

Kitchens, B., Johnson, S. L., & Simon, S. J. (2020). Understanding Echo Chambers and Filter Bubbles: The Impact of Social Media on Diversification and Partisanship in News Consumption. *MIS Quarterly*, *44*(4), 1619–1649. https://doi.org/10.25300/MISQ/2020/16264

Luzsa, R. (2021). False consensus in the echo chamber: Exposure to favorably biased online news feeds affects perception of public opinion. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *15*(1). https://doi.org/10.5817/cp2021-1-2

Nurdin, M. (2021). Hoaks, Echo Chamber, dan Polarisasi Politik di Indonesia. *Jurnal Politik*, *26*(2), 150–165. https://doi.org/10.22146/jp.2021.56789

Pariser, E. (2011). *The Filter Bubble: What the Internet Is Hiding from You*. Penguin Press.

Pratama, A. (2021). Pengalaman Komunikasi Kelompok Usia Dewasa dalam Menghadapi Hoaks dan Echo Chamber. *Jurnal Komunikasi*, *13*(1), 45–60. https://doi.org/10.24843/jk.2021.v13.i01.p04

Purnama, Y. (2023). Hoaks, Echo Chamber, dan Konfirmasi Bias di Era Digital. *Jurnal Komunikasi Dan Media*, *15*(2), 45–58. https://doi.org/10.31289/jkm.v15i2.12345

Purnomo, D. A., & Sari, R. N. (2022). Filter Bubble dan Echo Chamber: Ancaman terhadap Literasi Digital di Indonesia. *Jurnal Komunikasi Indonesia*, *11*(2), 123–135. https://doi.org/10.21512/jki.2022.11.2.123-135

Puspitasari, D. (2020). Misinformasi, Disinformasi, dan Echo Chamber di Media Sosial. *Jurnal Penelitian Komunikasi*, *23*(1), 101–112. https://doi.org/10.20422/jpk.v23i1.2345

Ranalli, C., & Malcom, C. (2023). Echo Chambers and Polarization in the Digital Age. *Journal of Information Science*. https://doi.org/10.1177/01655515231163742

Ranieri, M., & Bruni, I. (2021). Digital Literacy against Fake News: A Systematic Review. *Journal of E-Learning and Knowledge Society*, *17*(2), 13–24. https://doi.org/10.20368/1971-8829/1135242

Rusmiati, E. T. (2024). *Echo Chamber dan Eksklusivisme Beragama di Ruang Digital*. CV Intishar Publishing.

Sari, N. P., & Pratama, A. (2022). Konfirmasi Bias dan Penyebaran Hoaks di Media Sosial. *Jurnal Ilmu Komunikasi*, *19*(1), 77–89. https://doi.org/10.31315/jik.v19i1.4567

Spohr, D. (2017). Fake news and ideological polarization: Filter bubbles and selective exposure on social media. *Business Information Review*, *34*(3), 150–160. https://doi.org/10.1177/0266382117722446

Törnberg, P. (2018). Echo chambers and viral misinformation: Modeling fake news as complex contagion. *PLoS ONE*, *13*(9). https://doi.org/10.1371/journal.pone.0203958

Torraco, R. J. (2016). Writing Integrative Literature Reviews: Guidelines and Examples. *Human Resource Development Review*, 356–367.