

Increasing Critical Attitude and Information Literacy in Countering Hoaxes: Implementation of Smart Citizen and Good Citizen Concepts

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Abstract: *This research aims to analyze the implementation of smart citizen and good citizen concepts in enhancing critical thinking and information literacy to counter hoaxes. The research problem focuses on the low ability of society in identifying hoax information circulating on digital media. Through a qualitative approach using literature study method, this research analyzes scientific literature, official institutional reports, and credible media articles to identify characteristics of smart citizen and good citizen, information literacy enhancement strategies, and their implementation models in digital education. The results show that the integration of smart citizen and good citizen concepts through digital literacy education and information verification training has the potential to improve society's ability to identify hoaxes. Analysis of hoax cases in Indonesia shows the complexity of dissemination, ranging from public figure deepfakes, policy hoaxes, to health hoaxes. This research recommends the importance of integrating information literacy education in formal and informal education curricula as an effort to form a critical and intelligent society in the digital information era.*

Keywords: *smart citizen, good citizen, information literacy, hoaxes, critical thinking*

Abstrak: Penelitian ini bertujuan menganalisis implementasi konsep smart citizen dan good citizen dalam meningkatkan sikap kritis dan literasi informasi untuk menangkal hoaks. Permasalahan penelitian berfokus pada rendahnya kemampuan masyarakat dalam mengidentifikasi informasi hoaks yang beredar di media digital. Melalui pendekatan kualitatif dengan metode studi pustaka, penelitian menganalisis literatur ilmiah, laporan lembaga resmi, dan artikel media terpercaya untuk mengidentifikasi karakteristik smart citizen dan good citizen, strategi peningkatan literasi informasi, serta model implementasinya dalam pendidikan digital. Hasil penelitian menunjukkan bahwa integrasi konsep smart citizen dan good citizen melalui pendidikan literasi digital dan pelatihan verifikasi informasi berpotensi meningkatkan kemampuan masyarakat dalam mengidentifikasi hoaks. Analisis kasus hoaks di Indonesia menunjukkan kompleksitas penyebaran, mulai dari deepfake figur publik, hoaks kebijakan, hingga hoaks kesehatan. Penelitian merekomendasikan pentingnya integrasi pendidikan literasi informasi dalam kurikulum formal dan informal sebagai upaya membentuk masyarakat yang kritis dan cerdas dalam era informasi digital.

Kata kunci: smart citizen, good citizen, literasi informasi, hoaks, sikap kritis

Introduction

The digital era and the development of information technology have had a significant impact on how society accesses and shares information. This ease of access to information, unfortunately, is not always matched by the ability to filter and verify the truth of such information. According to a report from the Ministry of Communication and Information Technology of the Republic of Indonesia (2022), throughout 2021 there were more than 1,100 hoax contents identified circulating on various digital platforms related to COVID-19 alone, excluding hoaxes in other fields. The phenomenon of massive hoax dissemination potentially leads to various adverse effects, such as misunderstandings, social polarization, and horizontal conflicts. Wardle and Derakhshan (2017) emphasize that the increased flow of digital information has created new challenges in the form of information pollution, where misinformation and disinformation not only affect public perception of various important issues such as health and climate change but also potentially trigger distrust toward legitimate sources of information and deepen polarization in society. Research by Mastel (2019) shows that approximately 64.4% of social media users in Indonesia have believed and shared information that later proved to be hoaxes.

Amid these problems, the concepts of smart citizen and good citizen offer a new perspective in efforts to counter the spread of hoaxes. Smart citizen refers to individuals who not only can access digital technology but also actively utilize it critically and responsibly in smart city development (Cardullo & Kitchin, 2019). Good citizen is a citizen who actively participates in the community, upholds social ethics, and has the awareness to contribute to the common good (Westheimer & Kahne, 2004).

This research analyzes three significant hoax cases that occurred in Indonesia as case studies to explore the implementation of smart citizen and good citizen concepts in countering hoaxes. First, the deepfake case of public figures Raffi Ahmad and Najwa Shihab that occurred in June 2023, which shows how AI technology is utilized to manipulate audiovisual content and create very convincing false narratives. Second, the case of the hoax about PLN electricity tariff discount extension in early 2025, which exploits public policy and basic needs of society to spread misleading information. Third, the case of the COVID-19 vaccination hoax in May 2021 claiming the presence of magnetic microchips in vaccines, which illustrates how public fear and anxiety can be exploited to spread health misinformation. These three cases were chosen because they represent different hoax typologies while demanding the application of various information literacy and critical attitudes to detect and counter them.

The CRAAP (Currency, Relevance, Authority, Accuracy, Purpose) model developed by Meriam Library at California State University, Chico (Blakeslee, 2004) will be used as an analytical framework to evaluate the credibility of information in these cases, while critical attitude indicators from Facione (2015)

will be applied to assess how smart citizens and good citizens can identify and respond to the spread of hoaxes. This research will also explore how digital literacy competencies identified by Hobbs (2010)—access, analysis, creation, reflection, and action—can be implemented in countering the three hoax cases being analyzed.

The purpose of this research is to examine how the concepts of Smart Citizen and Good Citizen are implemented in society to enhance critical attitudes and information literacy to counter hoaxes. Specifically, this research seeks to: (1) identify the characteristics of smart citizen and good citizen in the context of digital literacy; (2) analyze strategies for enhancing critical attitudes and information literacy in society; and (3) analyze the roles of Smart Citizen and Good Citizen in the context of information literacy to counter hoaxes.

Literature Review

Smart Citizen and Good Citizen Concepts

The concept of smart citizen has developed alongside the discourse on smart cities that has become a global trend in sustainable urban development. Cardullo and Kitchin (2019) state that the concept of smart citizen refers to individuals who are not only passive consumers of smart city technology solutions but also actively participate in the city development process through citizen empowerment. They emphasize the importance of a citizen-centric approach, namely the involvement of citizens as active actors in the city development process, not merely as objects of technological policy.

In a social context, smart citizens have a role as agents of change who utilize technology to address various social problems, including the spread of hoaxes and disinformation. Komninos and Mora (2018) highlight the importance of smart citizens as agents of social change who leverage technology to encourage citizen involvement in digital communities, including in the dissemination of accurate information and active participation in smart city development.

Good Citizen Concept

Good citizen di era digital menunjukkan literasi kewarganegaraan digital yang mencakup pemahaman sistem politik dalam konteks digital, kemampuan berpartisipasi secara bermakna dalam diskursus online, dan komitmen terhadap etika digital (Choi, 2016; Ohler, 2011). Jones dan Mitchell (2016) mengidentifikasi karakteristik good citizen dalam konteks digital, mencakup partisipasi etis dalam diskursus publik, kepatuhan terhadap norma dan etika digital, serta kontribusi positif terhadap komunitas online. Good citizen mengedepankan tanggung jawab digital, yang meliputi kehati-hatian dalam membagikan informasi, menghormati privasi orang lain, dan berkomitmen untuk memerangi konten berbahaya termasuk hoaks dan ujaran kebencian.

Information Literacy and Digital Literacy

Information literacy is a set of abilities needed to identify, locate, evaluate, and effectively use information (Association of College and Research Libraries, 2016). In a digital context, information literacy has evolved into digital literacy that encompasses the ability to use information and communication technology to find, evaluate, create, and communicate information, requiring both cognitive and technical abilities (Buckingham, 2015).

The CRAAP model (Currency, Relevance, Authority, Accuracy, Purpose) developed by Meriam Library at California State University, Chico (Blakeslee, 2004) provides a framework for evaluating the credibility of information based on five criteria: currency, relevance, authority of the source, accuracy, and purpose of creating the information. Meanwhile, Hobbs (2010) identifies five core digital literacy competencies: access (ability to find and use media and technology), analysis (understanding messages), creation (creating content), reflection (applying critical thinking), and action (working individually and collaboratively).

Juditha (2018) classifies hoaxes into several typologies based on her research findings, including political hoaxes aimed at discrediting political opponents, and health hoaxes containing false information about diseases and treatments. The spread of hoaxes is accelerated by several factors, including confirmation bias (the tendency to seek information that confirms existing beliefs), echo chambers (situations where individuals are only exposed to information that aligns with their views), and social media algorithms that prioritize controversial or emotional content (Cinelli et al., 2021). The impact of hoaxes is multidimensional, encompassing social aspects (societal polarization, erosion of trust), political aspects (delegitimization of democratic institutions), and economic aspects (financial losses due to decisions based on false information).

Critical attitude is an intellectual disposition to question, analyze, and evaluate information before accepting or rejecting it. Facione (2015) identifies indicators of critical attitude, including intellectual curiosity, systematic analysis, evidence-based evaluation, and openness to different perspectives. Critical attitude is an important prerequisite for information literacy and hoax detection capabilities. Strengthening critical attitudes in formal education can be optimized through active learning approaches such as Problem Based Learning. This model encourages students to think critically and solve problems through contextual learning scenarios (Wijnia, Loyens, & Rikers, 2019).

Research Methods

This research uses a qualitative approach with a literature study or library research method. This approach was chosen because it was considered most appropriate to comprehensively explain how the phenomenon of hoax dissemination occurs, and how the concepts of smart citizen and good citizen can be applied to counteract it. Through literature study, researchers collect, compare,

and review various references related to the topic. The data used in this research comes from several types of sources. Primary sources include scientific articles from credible and relevant national and international journals on digital literacy issues, hoaxes, and smart and good citizen concepts.

Secondary sources include official reports from institutions such as the Ministry of Communication and Information Technology, Mastel, and trusted fact-checking organizations. In addition, this research also refers to news articles from mainstream media that have clarified certain hoax cases. This research also involves purposively selected case studies based on three main criteria: having a broad impact on society, representing different types of hoaxes (deepfake, public policy hoaxes, and health hoaxes), and aligning with the context of applying smart and good citizen concepts. Data was collected through documentation and content analysis. Documentation includes the collection of various documents, from academic articles and institutional reports to online news. Subsequently, content analysis techniques were applied to identify general patterns in the spread of hoaxes and their relationship with critical attitudes and information literacy.

Reference searches were conducted using various databases such as Google Scholar, DOAJ, ScienceDirect, and JSTOR. Keywords used include: "smart citizen," "good citizen," "digital literacy," "hoax detection," and similar terms in both Indonesian and English. Analysis was conducted in several stages. First, the data reduction stage, which involved selecting the most relevant information and discarding data that did not align with the research focus. Second, data presentation, where selected data was arranged narratively and accompanied by visualizations (images or tables) when necessary. Third, the interpretation stage, which involved analyzing the meaning of the data by connecting it to theory and research objectives. Finally, conclusions were drawn to formulate the core findings and their implications.

In analyzing the findings, this research uses several frameworks. First, the CRAAP model developed by Meriam Library, California State University, is used to evaluate the credibility of information from various hoax cases. Second, critical attitude indicators from Facione (2015) are used to measure an individual's ability to respond to information rationally. Third, the digital literacy concept from Hobbs (2010) is used to assess the extent of an individual's technical and cognitive abilities in addressing hoaxes in the digital era.

Results and Discussion

Characteristics of Smart Citizen and Good Citizen in the Digital Era

Analysis of the literature shows that the concept of smart citizen in the context of the digital era has several key characteristics: (1) ability to access and utilize digital technology effectively; (2) capability to sort and verify information; (3) awareness of digital privacy and security; and (4) ability to collaborate online for public interest (Zandbergen & Uitermark, 2020).

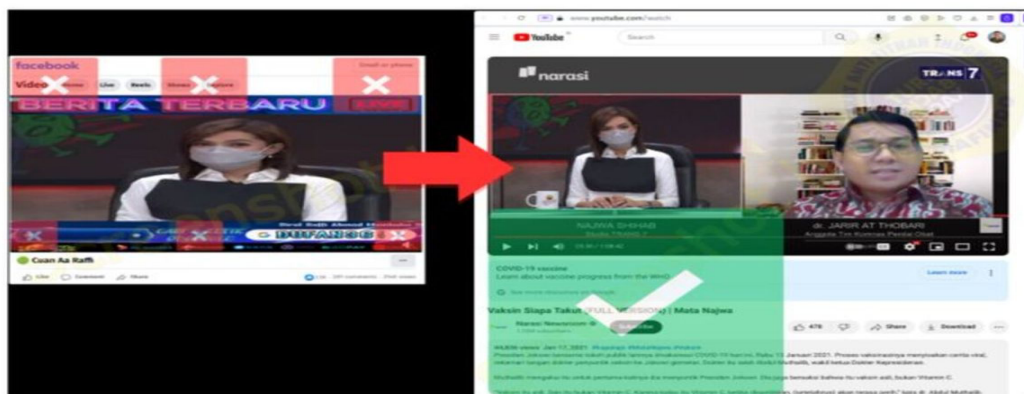
Meanwhile, the characteristics of good citizen in the digital context include: (1) ethical responsibility in digital activities; (2) active participation in public discourse constructively; (3) compliance with digital norms and ethics; and (4) positive contribution to digital communities (Choi, 2016; Ohler, 2011). These two concepts have significant overlap in the context of digital literacy and hoax countering, namely in the aspect of responsibility in processing and sharing information.

Smart citizens play a strategic role in countering hoaxes through their capacity to verify information using technical and cognitive skills, while good citizens contribute through ethical awareness not to spread unverified information and actively clarify hoaxes they encounter. The integration of these two concepts creates a strong foundation for the formation of a society that is not only technologically intelligent but also socially responsible.

Analysis of various studies shows a positive correlation between the level of information literacy and an individual's ability to identify hoax content. Individuals with high information literacy tend to have better abilities in evaluating source credibility, identifying inconsistencies in content, and cross-verifying received information. Khan and Idris (2019) found that information literacy competence and information verification skills are significant predictors of individuals' ability to recognize misinformation on social media. These findings align with literature emphasizing the importance of critical thinking skills—an essential component of information literacy—in assessing the reliability of information and avoiding the spread of hoaxes (Hobbs, 2010; Lewandowsky et al., 2012).

The relationship between information literacy and hoax detection ability is reciprocal. Good information literacy enhances hoax detection ability, while experience in identifying hoaxes strengthens information literacy skills. Therefore, information literacy education and hoax detection training should ideally be conducted in an integrated manner for optimal results.

Hoax Case Studies in Indonesia The Deepfake Case of Rafi Ahmad Najwa Shihab and Atta Halilintar



[**Figure 1.** A comparison between the hoax video footage (left) featuring Najwa Shihab, Raffi Ahmad, and Atta Halilintar ostensibly promoting online gambling sites, and a screenshot from a media clarification (right) confirming that the video is the result of AI manipulation (Source: People's Mind, January 17, 2024).]

On January 15, 2024, a video circulated on social media X (formerly Twitter) showing clips of a television discussion between Najwa Shihab, Raffi Ahmad, and Atta Halilintar. In the video, Najwa appears to be interviewing Raffi regarding a collaboration with an online gambling site called Kobe138. Not only Raffi, the video also portrays as if Atta had donated Rp100 billion to the community through the site.

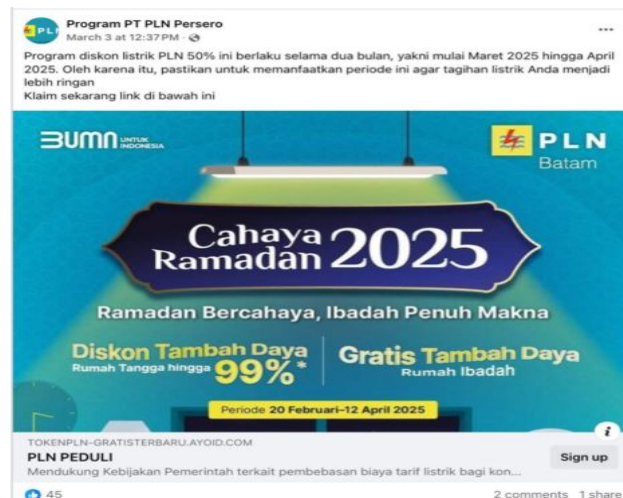
However, after investigation, the clip originated from an original video titled "Vaccine Who's Afraid" which aired on Narasi.tv on January 13, 2021, which actually contained Najwa's interview with Raffi Ahmad regarding Covid-19 vaccination. The video was then edited and manipulated with Artificial Intelligence (AI) technology to produce voices and facial expressions resembling the original figures, a technique known as deepfake.

In this context, the use of deepfake shows how technological sophistication can be misused to produce manipulative content that appears convincing, even without the knowledge of the figures portrayed. Although to date there has been no official clarification from Narasi.tv or the three figures in the video, the @TurnBackHoax account has declared the video as fabricated based on investigation of the original content and the technology used.

This case reinforces the urgency of information literacy and critical thinking, as stated by Khan & Idris (2019) who state that information literacy competence positively correlates with a person's ability to detect digital hoaxes. When deepfake content is made so realistic, only individuals with source evaluation and cross-verification abilities can identify the irregularities in such information.

Furthermore, Hobbs (2010) emphasizes that critical thinking skills are an essential component of modern media literacy, including in distinguishing manipulative content such as deepfakes. Therefore, digital literacy education becomes crucial to form a society that is not only able to access information but also understand and filter it ethically and rationally.

PLN Extension Hoax



[**Figure 2.** A hoax upload on Facebook stating that PLN is again providing a 50 percent discount on electricity tariffs for the March-April 2025 period. This narrative is denied by PLN and the Ministry of Energy and Mineral Resources who state that the program is only valid until February. (Source: ANTARA, March 5, 2025)]

In early 2025, a post circulated on the Facebook platform narrating that PLN was again providing a 50 percent electricity discount. The message was accompanied by a link claiming to be a site to claim the discount. This message went viral and was widely shared by people enticed by the electricity discount offer. Below is the narrative that circulated in the post: "This PLN 50% electricity discount program is valid for two months, from March 2025 to April 2025. Therefore, make sure to take advantage of this period so that your electricity bill becomes lighter. Claim now link below."

Executive Vice President of Corporate Communication and TJSL PLN Gregorius Adi Trianto quickly responded to the spread of this hoax with an official statement quoted by ANTARA News. In his statement, Gregorius emphasized that in early March 2025, posts circulated on Facebook narrating that PLN was again providing a 50 percent electricity tariff discount for the period from March to April. This claim was immediately clarified by the relevant parties. Executive Vice President of Corporate Communication and TJSL PLN, Gregorius Adi Trianto, emphasized that since March 1, 2025, electricity tariffs have returned to normal according to the first quarter 2025 adjustment.

This was also confirmed by the Minister of Energy and Mineral Resources, Bahlil Lahadalia, who stated that the electricity discount was only implemented for two months, namely January and February, as part of an economic stimulus. After that, there was no extension policy. This hoax mode is very effective because it utilizes the name of an official institution, basic needs of the community (electricity), and the beginning of the month moment to strengthen the impression

of credibility. Information is spread with a visual appearance resembling an official PLN campaign, complete with logo and similar design style. Some posts also include phishing links requesting personal data, showing characteristics of digital social engineering. Based on the classification of hoaxes from Juditha (2018), this hoax falls into the category of public policy hoaxes, which have the potential to create confusion regarding government decisions. In line with information literacy according to the Association of College and Research Libraries (2016), the public needs to have the ability to evaluate the authority and purpose of content, as well as verify its validity. In this case, the PLN hoax exploits society's information vulnerability regarding economic issues and subsidies.

Hoaxes like this have impacts that cannot be underestimated. Victims who are deceived may experience financial losses due to data theft and misuse of personal information. PLN must allocate resources to handle the surge in questions and complaints related to the hoax. The spread of hoaxes can also erode public trust in PLN and official communications from government institutions, as well as cause anxiety in society, especially for those who are less affluent and highly dependent on electricity subsidy policies.

The concept of good citizen in a digital context, as proposed by Choi (2016) and Ohler (2011), includes ethical participation in online discourse, compliance with digital norms, and responsibility to prevent the spread of hoaxes. Ideally, society should verify before sharing information, use official sources (such as PLN or Ministry of Communication and Information websites), and report suspicious posts. Good citizens not only passively receive information but actively maintain a healthy and ethical digital space.

Hoaks COVID-19 dan Vaksinasi



[**Figure 3.** Screenshot from a hoax video showing someone sticking a metal coin to a COVID-19 vaccine injection container, with a false claim that the vaccine contains a magnetic microchip. (Source: Tribunnews.com, May 28, 2021)]

In May 2021, videos circulated on various social media platforms showing someone placing a Rp 1,000 coin on the arm at the site of a COVID-19 vaccination injection. In the video, the coin is shown sticking to the skin in the area of the vaccination injection site. The narrative accompanying the video claimed that this phenomenon proved COVID-19 vaccines contain magnetic microchips injected into the body of vaccine recipients. This video went viral and was widely shared by netizens, triggering concerns among the public. Some versions of the narrative even added claims that the microchips were used to track or control vaccine recipients, further exacerbating fears and doubts about the COVID-19 vaccination program.

In May 2021, a viral video circulated showing someone attaching a metal coin to a COVID-19 vaccine injection site, as if there was magnetic force due to microchips in the vaccine. This narrative was immediately denied by the Indonesian Ministry of Health. Prof. Dr. Sri Rezeki Hadinegoro from ITAGI emphasized that it is impossible for there to be metal or magnetic particles in vaccines, as the needle hole is too small to contain them. Vaccine contents are only proteins, salts, lipids, solvents, and other stabilizing materials, not metals or microchips. Dr. Siti Nadia Tarmidzi, spokesperson for COVID-19 vaccination, also stated that coins can stick to the skin due to moisture or sweat, not because of vaccine effects.

Analysis of the Phenomenon and Scientific Explanation

This phenomenon is a form of visual-based disinformation, that is, hoaxes made convincing through physical demonstration. The hoax video shows someone performing an action of attaching a coin to the skin, creating the impression as if there is magnetic force. In fact, scientifically, this reaction can occur due to moist or oily skin, not because of magnetic content in the body. This hoax narrative also plays on public fears of technology, particularly microchips, and reinforces misleading conspiracy theories.

Referring to Juditha's classification (2018), this hoax falls into the category of health hoaxes, namely false information related to medical procedures or impacts. This hoax also exploits confirmation bias: people who were initially suspicious of vaccines become more likely to believe it. Combined with simple but suggestive visualization, this message spread widely because it was easy to understand and reproduce by anyone.

In addition, as explained in the CRAAP model (Blakeslee, 2004), this hoax fails to meet aspects of accuracy and authority, as it is not based on scientific data and does not come from official sources. However, because of its simple and emotional form, this hoax quickly spread on social media.

Social and Health Impact

This hoax caused doubts about vaccination, slowed the achievement of herd immunity targets, and increased the potential for rejection of immunization programs. This is very dangerous because it reduces the effectiveness of public health policies and prolongs the pandemic. According to Choi (2016) and Jones & Mitchell (2016), good citizens in the digital era are required to filter health information responsibly. In the context of this hoax, good citizens would clarify through official channels such as the Ministry of Health or WHO websites, and not redistribute misleading visual content. Good citizens also play an active role in educating online communities about the dangers of health hoaxes.

Analysis of the three hoax cases reveals several consistent patterns in the spread of hoaxes in Indonesia. First, the exploitation of advanced technology, where the deepfake case shows a trend of using AI to create manipulative content that is increasingly difficult to distinguish from original content. Second, the use of closed platforms such as WhatsApp as the main channel for spreading hoaxes, which makes monitoring and clarification difficult. Third, the exploitation of sensitive issues and public fears, whether related to economics (PLN hoax), health (vaccine hoax), or the reputation of public figures (deepfake). Fourth, the use of convincing visual elements, which increases the perception of information credibility.

Facing these patterns, the implementation of smart citizen and good citizen concepts needs to be done in an integrated manner through several strategies. First, enhancing technological literacy that includes understanding of digital manipulation technologies such as deepfake and the ability to identify manipulative content. Second, developing information verification skills using the CRAAP Model or other credibility evaluation frameworks. Third, strengthening critical attitudes according to Facione's indicators (2015), which include intellectual curiosity, systematic analysis, and evidence-based evaluation. Fourth, increasing ethical awareness in digital behavior, including the responsibility not to spread unverified information.

The role of educational institutions, media, and government is also crucial in implementing smart citizen and good citizen concepts to counter hoaxes. Educational institutions can integrate digital and information literacy education into formal curricula, media can provide platforms for fact verification and hoax clarification, while the government can develop policies and regulations that support a healthy information ecosystem.

The combination of these approaches creates a multi-layered system in countering the spread of hoaxes. Smart citizens play a role in detecting and verifying information, while good citizens play a role in preventing the spread and actively disseminating clarifications. These two concepts, if implemented

effectively, can significantly enhance society's resilience against hoaxes and disinformation in the digital era.

Conclusion

This research analyzes the implementation of smart citizen and good citizen concepts in enhancing critical attitudes and information literacy to counter hoaxes. Based on analysis of the characteristics of both concepts and case studies of hoaxes in Indonesia, it can be concluded that the integration of smart citizen and good citizen concepts forms a strong foundation in building a society that is not only technologically intelligent but also socially responsible in facing the spread of hoaxes. There is a positive correlation between the level of information literacy and the ability to detect hoaxes, where individuals with high information literacy tend to be more capable of evaluating source credibility and performing cross-verification. Hoax case studies in Indonesia show trends in the use of advanced technology such as deepfake, utilization of closed platforms such as WhatsApp, exploitation of sensitive issues and public fears, and the use of convincing visuals as dissemination strategies. The role of society as smart citizens and good citizens is very important in countering hoaxes through information verification, enhancing digital literacy, reporting misleading content, and educating communities. Information literacy education needs to be integrated into formal and informal curricula to form a critical and intelligent society in the digital information era, as well as developing information verification skills which are essential components of the smart citizen and good citizen concepts. Thus, the implementation of smart citizen and good citizen concepts has significant potential in creating a healthier and more trustworthy information ecosystem, supporting government programs in countering hoaxes, and building society's resilience against disinformation in the digital era.

References

- Antara News. (2025, 5 Maret). Hoaks! Diskon Listrik 50 Persen PLN Kembali Hadir Periode Maret – April 2025. <https://www.antaranews.com/berita/3954732/hoaks-diskon-listrik-50-persen-pln-kembali-hadir-periode-maret-april-2025>
- Association of College and Research Libraries. (2016). Framework for information literacy for higher education. American Library Association. <http://www.ala.org/acrl/standards/ilframework>
- Blakeslee, S. (n.d.). The CRAAP Test. www.csuchico.edu/lins/handouts/eval_websites.pdf
- Buckingham, D. (2015). Defining digital literacy - What do young people need to know about digital media? *Nordic Journal of Digital Literacy*, 10(Jubileumsnummer), 21–35. <https://doi.org/10.18261/ISSN1891-943X-2015-Jubileumsnummer-03>

- Cardullo, P., & Kitchin, R. (2019). Being a 'citizen' in the smart city: up and down the scaffold of smart citizen participation in Dublin, Ireland. *GeoJournal*, 84(1), 1–13. <https://doi.org/10.1007/s10708-018-9845-8>
- Choi, M. (2016). A Concept Analysis of Digital Citizenship for Democratic Citizenship Education in the Internet Age. *Theory & Research in Social Education*, 44(4), 565–607. <https://doi.org/10.1080/00933104.2016.1210549>
- Cinelli, M., de Francisci Morales, G., Galeazzi, A., Quattrociocchi, W., & Starnini, M. (2021). The echo chamber effect on social media. *Proceedings of the National Academy of Sciences*, 118(9). <https://doi.org/10.1073/pnas.2023301118>
- Facione, P. (2015). Critical Thinking: What It Is and Why It Counts. <https://www.researchgate.net/publication/251303244>
- Jones, L. M., & Mitchell, K. J. (2016). Defining and measuring youth digital citizenship. *New Media & Society*, 18(9), 2063–2079. <https://doi.org/10.1177/1461444815577797>
- Juditha, C. (2018). Hoax Communication Interactivity in Social Media and Anticipation (Interaksi Komunikasi Hoax di Media Sosial serta Antisipasinya). *Journal Pekommas*, 3(1), 31. <https://doi.org/10.30818/jpkm.2018.2030104>
- Kementerian Kesehatan Republik Indonesia. (2021). HOAX: Vaksin COVID-19 Mengandung Microchip Magnetik. Sehat Negeriku. Diakses dari <https://www.sehatnegeriku.kemkes.go.id>.
- Kementerian Komunikasi dan Informatika RI. (2022). Laporan tahunan penanganan konten hoaks 2021. Direktorat Aptika, Kominfo RI.
- Khan, M. L., & Idris, I. K. (2019). Recognise misinformation and verify before sharing: a reasoned action and information literacy perspective. *Behaviour & Information Technology*, 38(12), 1194–1212. <https://doi.org/10.1080/0144929X.2019.1578828>
- Komninos, N., & Mora, L. (2018). Exploring the big picture of smart city research. *Scienze Regionali*, 17(1), 15–38. <https://doi.org/10.14650/88815>
- Lewandowsky, S., Ecker, U. K., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological science in the public interest*, 13(3), 106–131.
- Mastel (Masyarakat Telematika Indonesia). (2019). Hasil survei wabah hoaks nasional 2019. Mastel Indonesia.
- Ohler, J. (2011). Digital Citizenship Means Character Education for the Digital Age. *Kappa Delta Pi Record*, 47(sup1), 25–27. <https://doi.org/10.1080/00228958.2011.10516720>
- Pikiran Rakyat. (2024, 17 Januari). Gunakan Deepfake AI, Video Najwa Shihab, Raffi Ahmad dan Atta Halilintar Seolah Promosikan Situs Judi Online. Diakses dari <https://ciamis.pikiran-rakyat.com/teknologi/pr-507601621/gunakan-deepfake-ai-video-najwa-shihab-raffi-ahmad-dan-atta-halilintar-seolah-promosikan-situs-judi-online>
- Wardle, C., & Derakhshan, H. (2017). Information Disorder: Toward an interdisciplinary framework for research and policy making Information Disorder Toward an interdisciplinary framework for research and policymaking. www.coe.int

- Westheimer, J., & Kahne, J. (2004). What Kind of Citizen? The Politics of Educating for Democracy. *American Educational Research Journal*, 41(2), 237–269. <https://doi.org/10.3102/00028312041002237>
- Wijnia, L., Loyens, S. M. M., & Rikers, R. M. J. P. (2019). The Problem-Based Learning Process. In *The Wiley Handbook of Problem-Based Learning* (pp. 273–295). Wiley. <https://doi.org/10.1002/9781119173243.ch12>
- Zandbergen, D., & Uitermark, J. (2020). In search of the Smart Citizen: Republican and cybernetic citizenship in the smart city. *Urban Studies*, 57(8), 1733–1748. <https://doi.org/10.1177/0042098019847410>