Sentiment Analysis of X Social Media User Regarding Whitening Cream: A Netnography Study

Piki Rahman Padilah[1], **Raden Aldizal Mahendra Rizkio Syamsudin[1,2*]**, Mohamad Rizki Pamula Hairuddin[3]

[1]Program of Pharmacy, Faculty of Mathematics and Naturan Sciences, Universitas Garut, Traogong Kaler, West Java, Indonesia;
[2]Doctoral of Pharmacy Program, Faculty of Pharmacy, Universitas Gadjah Mada, Bulaksumur, Sleman, Yogyakarta, Indonesia;
[3]Prapta Cipta Pesona Cosmetical Ltd, Bojongsoang, Bandung Regency, West Java, Indonesia;

Abstract

Background: Beauty is something that women long for, which is why many teenage girls resort to relatively quick methods that have not yet been proven safe. The use of social media is an effective means of communication between individuals, as it allows for the sharing of opinions and perspectives on a topic, article, or phenomenon that is currently happening. This study aimed to analyze the sentiments and opinions of users on X social media regarding whitening cream.

Methods: This study was conducted from June until August 2024 and extracted data through 2023 using a qualitative approach, netnographic study, and sentiment analysis to examine user posts on X social media. The stage of crawling user data was carried out using Google Colab tools with the Python programming language and data visualization with NVivo 14.

Results: The data collected consists of 1,906 tweets from 2023. The research findings indicate that negative sentiment overwhelmingly dominates compared to positive sentiment. In addition, six themes are discussed regarding the issue of whitening cream: information and education media, sharing experiences, emotionality, knowledge about whitening cream, communication response, and entertainment.

Conclusion: The findings showed that negative sentiment outweighs positive sentiment regarding whitening creams on X. This suggests concerns among users about the use and effects of these products. The dominant themes highlight the need for better policies and increased awareness regarding whitening creams. Consumer education on the risks of these products, facilitated by influencers or social media platforms, could help promote accurate information while also encouraging safe skincare practices. Further studies could explore ways to mitigate misinformation and enhance public education on consumer behavior.

Keywords: *Netnography, Sentiment, X Social Media, Whitening Cream.*

Introduction

Beauty is something that is highly coveted by women. It is so admired that women are willing to do anything to achieve the perfect concept of beauty that they desire[1]. The obsession with having fair skin is one of the reasons many teenage girls resort to methods that are relatively fast but have not been proven safe[2]. Cosmetics are products often used to enhance beauty and improve appearance without altering the structure or function of the body[3]. The increasing demand for cosmetics has resulted in the availability of a wide variety of products in the market[4].

Many illegal products, including cosmetics, are widely sold online and offline, often deceiving consumers into purchasing unsafe items. Illegal cosmetics that do not comply with *Badan Pengawas Obat dan Makanan* (BPOM) regulations or fall under BPOM supervision can pose significant health risks to consumers[5]. Sellers often use keywords such as "Compounded Cream *(Krim Racik)*," "Doctor Cream *(Krim Dokter)*," "Whitening Cream *(Krim Pemutih)*,"

"Pharmacists Cream *(Krim Apoteker)*," and "BPOM Cream (Krim BPOM)" on e-commerce platforms to attract and appeal to buyers.

One of the active ingredient compounds often misused in whitening creams is mercury. Using whitening creams containing mercury can lead to hyperpigmentation, skin irritation, and allergies. At very high doses, mercury can cause kidney damage, brain damage, skin cancer, and complications in maternal pregnancy and fetal development. Short-term exposure can result in reactions such as nausea, vomiting, diarrhea, and lung damage[6].

Despite the massive use of whitening creams, some concerns keep growing over their safety and how social media perceive their customer in using those products safely. Hermans et al. reported that young adults are highly intent on following what influencers say regarding cosmetic procedures[7]. Most existing studies focus on whitening creams' chemical composition, health risks, and regulatory aspects. Still, there is a lack of research on public sentiment, misinformation, and consumer awareness regarding

these products on social media platforms. Understanding how users engage with whitening creams online, their concerns and the spread of information or misinformation can help inform better consumer education and policy interventions.

Netnography is a research method that is conducted on online media or social networks using the internet. Kozinets states that netnography involves ethical and thorough ethnographic research through participation, observation, archival work, online communication, digital data collection, and the study of new networks[8]. Sentiment analysis is used to determine the tendency of a person's opinion on a problem or object, whether it leans toward being negative, positive, or neutral[9]. The use of social media is rapidly increasing as it provides a platform for communication where individuals can share opinions and perspectives on topics, articles, or phenomena[10].

Based on this background, the problem statement in this study is: How do the behaviors, opinions, and sentiments of X social media users reflect their perspectives on whitening cream? The purpose of this study is to analyze the sentiments and opinions of X social media users toward whitening cream. The benefit of this research is to provide information and an overview of the sentiments and opinions of X social media users regarding whitening cream.

Materials and Methods

Research design
This research was conducted using both Qualitative and Semi-Quantitative approaches, a Descriptive study, and the Netnography method. The study was conducted by analyzing the sentiments of X social media users and collecting research data retrospectively.

Research Population and Sample
The population in this study consists of social media users, mainly those who interact in the Indonesian language. A purposive sampling technique was employed in this research to ensure that the tweets selected fulfilled the criteria. The sample used in this study was X social media users based on the defined inclusion criteria.

The inclusion criteria for this research are tweets from X social media users in 2023, written in Indonesian and located in Indonesia, and tweets containing any of the following 10 keywords: "*krim pemutih* (Whitening Cream)," "*krim racik* (Dispensed Cream)," "*krim abal-abal* (Fake Cream)," "*krim* bpom (BPOM Cream)," "*krim illegal* (Illegal Cream)," "*krim apoteker* (Pharmacists Cream)," "*merkuri* (Mercury),"

"hidrokuinon (Hydroquinone)," "*krim pemutih dokter* (Doctor Whitening Cream)," and "*skincare etiket biru* (Blue Label Skincare)."

The exclusion criteria for this research are tweets posted on X social media outside of 2023, written in English or another language besides Indonesian, duplicate and spam tweets, and tweets resembling the specified keywords but not relevant to the study.

Research Variable
In this study, X social media users are the independent variable, while sentiment toward whitening cream is the dependent variable.

The Data Analysis
The research process consists of several stages, as presented in Figure 1. First, a literature study is conducted as an initial step to review relevant references and establish the research foundation. Next, the data collection process is carried out using Python software for data crawling, tweet selection, and dataset labeling. The sentiment analysis stage follows, where the collected data is categorized into positive and negative sentiments and analyzed using the Miles and Huberman method, which provides a systematic framework for qualitative data analysis. The method emphasizes three key activities: data reduction, data display, and conclusion drawing. A predefined coding framework is applied to standardize the sentiment classification and ensure reliability in the analysis. Finally, in the discussion and reporting stage, the analysis results are thoroughly discussed, and the research findings are compiled into a comprehensive report, providing valuable insights
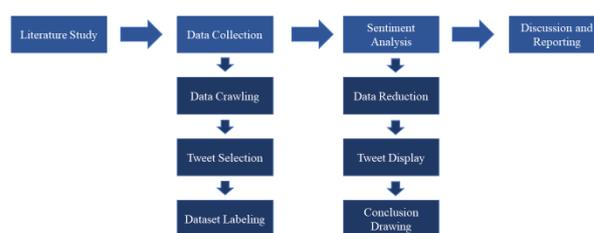
into the subject matter.
Figure 1. Workflow starting from literature study to reporting

Result and Discussion

Crawling data is the process of retrieving tweet data based on specified keywords. This process uses Google Colab tools with the Python programming language to search for tweets containing the determined keywords. After the data is collected, it is saved in CSV format. Based on the crawling results, a

total of 7,356 tweets were retrieved using 10 keyword. The selection of tweet data involves filtering the collected tweets according to the inclusion and exclusion criteria established in the research. After applying these criteria, the final dataset consists of 1,906 tweet.

After the data selection process, the dataset is labeled according to the sentiment in each user's tweet. The sentiments are categorized as positive or negative, and the labeling process is performed automatically using a Python library called Representations from Transformers (BERT). The

Transformers model was chosen because it is well-suited for analyzing conversational patterns without losing context and is highly effective for opinion-based text, where context and word choice significantly influence the meaning of the conversation[11]. Based on the results, 1,854 tweets were labeled with negative sentiment, while 52 were labeled with positive sentiment.

Based on the results of the research obtained from the results of social media user sentiment X on whitening cream could be seen in the figure below.

(a)

(b)

(c)

(d)

Figure 2. (a) Word cloud Result showed that the most dominant word was *Merkuri* (mercury) (b) Sentiment Visualization showed that negative sentiment outweighed positive sentiment (c) Geographical Mapping indicated mostly users located in Java Island, mainly in Jakarta City (d) Coding Theme consisted of six themes mainly about Education and Experience sharing.

Based on the results of the location analysis visualization of X social media users using several keywords, most users in Indonesia are concentrated on the island of Java. Additionally, a significant number of locations are classified as unknown because X social media users can freely select or omit

their location settings. This distribution may be influenced by the fact that internet accessibility is more advanced on the island of Java compared to other regions[12].

The Word Cloud visualization generated from the discussion of whitening cream on X social media

highlights several prominent keywords displayed in larger font sizes. These include *"Merkuri", "*Skincare*", "Abal", "Dokter Kulit", "*@ohmybeautybank*", "putih", "bpom", and "Muka Glowing".*

In this context, the dominant word discussed by X social media users is *"Merkuri,"* which refers to harmful cosmetic ingredients commonly found in some whitening cream products. Similarly, the word "Skincare" is another frequently mentioned term on X social media, as it is closely associated with facial care. Additionally, the word "@ohmybeautybank" appears prominently, representing an auto-based account often utilized for sharing stories, reviews, or cosmetics-related issues.

According to the visualization results of the Word Frequency Query Code shown in Table 1, the word "mercury" appears the most frequently, with 1,596 occurrences, followed by "skincare" with 367 occurrences and "@ohmybeautybank" with 292 occurrences. X social media users predominantly discuss topics such as mercury, skincare, BPOM, and *"abal"* (a term referring to counterfeit or substandard products), all associated with whitening creams. Additionally, the word "@ohmybeautybank" stands out as a reference to an auto base where a community of cosmetics users gathers to share stories and reviews.

Table 1. The result of Word Frequency Query Coding explained the word cloud result. Mercury dominated most mentioned word in the study

Word	Length	Count	Weighted Percentage (%)
Merkuri	7	1569	5.95
Skincare	8	367	1.39
@ohmybeautybank	15	292	1.11
Bpom	4	276	1.05
Abal	4	266	1.01
Kulit	5	203	0.77
Muka	4	193	0.74
Putih	5	191	0.72
@tanyakanrl	11	168	0.64
dokter	6	157	0.60

The results of sentiment data visualization reveal that most tweets from X social media users express negative sentiment, with 1,854 tweets compared to 52 tweets expressing positive sentiment. The negative sentiments predominantly include remarks related to accusations, suspicion, anger, fear, victim experiences from mercury use, side effects of whitening creams, and characteristics of such products. On the other hand, positive sentiments mainly consist of advice, educational content, and invitations to preventive actions shared by X social media users regarding the whitening cream issue.

Furthermore, the visualization of coding themes processed using NVivo 14 software identifies six themes from the analysis of X social media users' tweets about the whitening cream issue.

Information and Education

Social media plays an important role in society, enabling various activities such as exchanging and accessing information in ways that are faster, easier, and more effective[13]. It offers features for sharing ideas, opinions, reactions, interests, activities, and other forms of user-generated content that other users can receive. Additionally, social media is often used as a platform for sharing information about issues or for communicating with friends.

Based on the investigation results, X social media users frequently post comments to educate fellow users during their conversations. X social media serves as a platform for discussions on a variety of topics, including educational exchanges about whitening creams[14]. Users provide insights such as advice on avoiding over-the-counter sales of blue-label creams without a doctor's prescription, warnings against using skincare products without BPOM certification, and reminders that having white skin is not necessarily synonymous with being beautiful or healthy.

Furthermore, communication among X social media users includes sharing information about harmful ingredients in certain skincare products and encouraging questions about the products' safety. This exchange of information aims to help users avoid dangerous facial treatments and make more informed choices.

According to Emy, in the healthcare industry, information must be fast, accurate, and up-to-date[15]. Social media has significant potential as an accessible medium for health promotions and interventions, enabling the dissemination of health-related information to the public. Such activities aim to enhance community awareness and support for

health initiatives. To achieve this, the role of pharmaceutical and healthcare workers must be strengthened in managing health promotion aspects, ensuring that the community receives more reliable and high-quality information.

Sharing Experiences

Social media offers numerous benefits, one of which is enabling communication and the sharing of stories among users. In this context, X social media serves as a gathering place for users with shared interests[16]. One of the themes identified in this study is the sharing of experiences. X social media users frequently share their experiences, stories, and advice on issues related to whitening creams.

This phenomenon also represents a form of self-disclosure. For instance, anonymous posts on autobase accounts often reflect expressions of emotions such as sadness, confusion, or distress. This self-disclosure allows users to express themselves more comfortably and openly, fostering a sense of relief and emotional support[17].

According to Zhang[18], users on social networks often share health information, which can be beneficial to others. Similarly, Yan[19] also highlights that opinions shared on social media, especially those based on personal experiences, can significantly influence decision-making. Such opinions are often more impactful than advice from close acquaintances. These insights underscore the importance of social media as a valuable tool for health services and practitioners in disseminating information and influencing health-related decisions.

Knowledge of Whitening Cream

The theme identified in this research is the knowledge related to whitening creams. Tweets from X social media users highlight various aspects, including the characteristics of illegal creams, side effects, the sale of dangerous skincare products, preventive actions against illegal cosmetics, and advice on proper skincare usage. Several tweets discuss the characteristics of illegal whitening creams. According to X social media users, these characteristics include yellow coloring, sticky textures, bulk sales in kilograms, a butter-like appearance due to striking yellow coloration, lack of a BPOM label, and unusual packaging designs.

Ani[20] elaborates on the characteristics of mercury-containing whitening creams, noting that they often have a striking yellow or white shiny appearance, a distinctive metallic odor, a sticky and warm texture, inhomogeneous composition (not unified and rough), and can cause itching and redness when applied. Such creams produce a whitening effect in a short time. Additionally, illegal whitening

creams are characterized by a lack of brand identity, missing ingredient lists, absence of a BPOM registration number, missing batch numbers, expiration dates, and the name of the production site[21].

The side effects of whitening creams are another widely discussed topic among X social media users. Tweets describe adverse reactions such as burning, breakouts, peeling, hyperpigmentation, and skin cancer. Many users note that while these products may produce satisfying initial results, negative effects often emerge after prolonged use or years later. Common side effects include skin itching, redness, dependency on the product, and severe conditions like hyperpigmentation or even skin cancer[22]. Users also express concerns about the sale of whitening creams in the market. Sellers often use e-commerce platforms and live shop features to market their products, attracting consumers while bypassing regulatory scrutiny. The sale of illegal cosmetics through e-commerce poses significant consumer risks, including compromised product quality, questionable safety, and potential health hazards. To address these risks, it is imperative for both government authorities and e-commerce platforms to take responsibility for protecting consumers from the circulation of illegal cosmetics. Additionally, consumers must exercise caution when shopping online, ensuring that purchased products have valid distribution permits from BPOM[23].

Communication Response

Another theme identified in this study is the form of communication between X social media users. In this context, users engage in a variety of interactions, including accusations of using whitening creams, expressing gratitude for not using them, sharing a desire to use whitening creams, offering advice to try them, regretting the use of dangerous creams, inviting others to use whitening creams, and admitting ignorance about the dangers of these products. Various groups within society frequently use social media for purposes beyond just information gathering and entertainment. It serves as a public space that allows individuals to share opinions, offer critiques, and discuss issues or developments occurring in Indonesia[24].

According to Benetoli[25], the use of social media can have a positive impact on its users, particularly in the context of healthcare. Social media allows patients to interact with peers, engage in communication with healthcare providers, and form support networks. It serves as a platform for sharing information and fostering interactions between patients and health workers, making it a valuable tool in supporting

pharmaceutical practice. The potential of social media to contribute to healthcare communication is significant, enhancing both patient support and access to information.

Emotionality

It is important for every individual to have the freedom of speech to express their ideas, opinions, and emotions, ensuring that their voices are heard by others[26]. However, on X social media, this freedom of expression often manifests as an exchange of opinions among users, which can include disappointment, annoyance, anger, fear, and anxiety surrounding the issue of whitening creams. Disclosing emotions on social media has become common for users, not just in pleasant situations but also when expressing negative emotions or frustrations. It is not unusual for users to share feelings of irritation or anger online, and this has become a standard part of social media interaction[27].

In today's digital age, hate speech and negative emotional expressions are often delivered, either in person or through social media accounts, showing emotional attitudes and low literacy. As a result, social media can become a platform for expressing emotions and feelings that focus on provocative thoughts and actions[28]. According to Padmayani, the negligence of influencers who promote cosmetic products through social media can lead to public unrest. Often, social media users are poorly educated or unaware of the risks associated with illegal cosmetics. This represents a significant challenge for health professionals, who must provide education to the public about the dangers of illegal cosmetic products[29].

Entertainment

The final theme identified in this study is entertainment among X social media users. Social interactions between users often form on this platform, which is commonly used for passing time, entertainment, relaxation, and expressing opinions[30]. Based on the findings, the word "mercury" is frequently used to describe the contrast between a white face and dark skin. Often, the term "mercury" is used in a mocking or joking manner as users exchange comments or jokes in response to posts.

X social media has evolved into a platform where users can channel their emotions, relax, and pass the time. For instance, humorous accounts or posts allow users to find entertainment and a sense of amusement. Compared to television, X social media has become more positive and informative. The content shared on X social media includes confessions, jokes, gossip, motivational words, and information, all of which reflect users' personal experiences[31].

Humor plays a vital role in stimulating the recall of information, particularly when the information is obtained unintentionally. In this context, health-related information, such as funny or socially engaging video content, can be effectively utilized by health workers as educational media to deliver important messages to the public, as suggested by Prybutok et al[32].

This study has several limitations. First, the data was collected only from X social media, which may not fully represent users' perspectives on another platform. Second, the study focused on tweets from 2023, meaning the findings may not capture evolving opinions or trends beyond this timeframe. Lastly, this study primarily analyzes textual data and does not account for multimedia content, such as images or videos, which could provide further insights into user sentiment and engagement. Future research could expand the dataset to multiple social media platforms, incorporate longitudinal data, and employ mixed-method approaches to gain a more comprehensive understanding of consumer sentiment regarding whitening creams.

Conclusions

The findings showed that negative sentiment outweighs positive sentiment regarding whitening creams on X. This suggests concerns among users about the use and effects of these products. The dominant themes highlight the need for better policies and increased awareness regarding whitening creams. Consumer education on the risks of these products, facilitated by influencers or social media platforms, could help promote accurate information while also encouraging safe skincare practices. Further studies could explore ways to mitigate misinformation and enhance public education on consumer behavior.

Acknowledgment

Ethical Consideration

Since this is an ethnographic study based on publicly available data from social media platforms, no ethical clearance was required for this research.

Author Contribution

Study design   :   RAMRS, MRPH
Data acquisition   :   PRP
Data analysis   :   PRP
Manuscript writing   :   RAMRS, MRPH, PRP

Competing Interests

The authors declare that there are no competing interests related to this work.

Abbreviation

BERT   :   Bidirectional Encoder Representations from Transformers
BPOM   :   *Badan Pengawas Obat dan Makanan*

References

1. Arsitowati WH. Kecantikan Wanita Korea Sebagai Konsep Kecantikan Ideal Dalam Iklan New Pond'S White Beauty: What Our Brand Ambassadors Are Saying. *Humanika*. 2018;24(2):84-97. doi:10.14710/humanika.v24i2.17572

2. Amelia L, Fahmi K, Tamrin S. Konstruksi Makna Cantik bagi Remaja Perempuan Pengguna Pemutih Kulit Ilegal. *J Sos J Has Pemikiran, Penelit dan Pengemb Keilmuan Sosiol Pendidik.* 2022;1(3):139. doi:10.26858/sosialisasi.v1i3.38834

3. Saniati F. Analisis produk kosmetik Make Up salah satu merek global terhadap keputusan pembelian. *Satukan Tekad Menuju Indones Sehat.* 2020;09:457-464.

4. Dra O, Tetrasari H. Kosmetik Perawatan Kulit. 2019;(September 2022).

5. Liandhajani L. Tinjauan Yuridis terhadap Peredaran Produk Kosmetik Ilegal. *Literatus.* 2022;4(2):581-588. doi:10.37010/lit.v4i2.864

6. Musiam S, Noor RM, Ramadhani IF, et al. Analisis Zat Pemutih Berbahaya Pada Krim Malam Di Klinik Kecantikan Kota Banjarmasin. *J Insa Farm Indones*. 2019;2(1):18-25. doi:10.36387/jifi.v2i1.314

7. Hermans AM, Boerman SC, Veldhuis J. Follow, filter, filler? Social media usage and cosmetic procedure intention, acceptance, and normalization among young adults. *Body Image*. 2022;43:440-449. doi:10.1016/j.bodyim.2022.10.004

8. Sumartono S. Semantik dan netnografi sebagai pendekatan penelitian untuk perancangan kembali (redesign) sebuah produk. *Prod J Desain Prod (Pengetahuan dan Peranc Produk)*. 2018;3(3):95-100. doi:10.24821/productum.v3i3.1925

9. Nurzahputra A, Muslim MA. Analisis Sentimen pada Opini Mahasiswa Menggunakan Natural Language Processing. *Semin Nas Ilmu Komput.* 2022;(Snik):114-118.

10. Fitroh F, Hudaya F. Systematic Literature Review: Analisis Sentimen Berbasis Deep Learning. *J Nas Teknol dan Sist Inf.* 2023;9(2):132-140. doi:10.25077/teknosi.v9i2.2023.132-140

11. Tabinda Kokab Sayyida SA. Transformer-Based depp learning Models for the sentiment analysis of social media data. Published online 2022.

12. Rinaldi AR, Damanik J, Mutiarin D. Analisis Netnografi Sentimen Pengguna Twitter Terhadap Pembukaan Kembali Pariwisata Di Tengah Pandemi Covid-19. *Pariwisata Budaya J Ilm Agama Dan Budaya*. 2021;6(1):27. doi:10.25078/pba.v6i1.1982

13. Damayanti A, Delima ID, Suseno A. Pemanfaatan Media Sosial Sebagai Media Informasi dan Publikasi (Studi Deskriptif Kualitatif pada Akun Instagram @rumahkimkotatangerang). J PIKMA *Publ Ilmu Komun Media Dan Cine.* 2023;6(1):173-190. doi:10.24076/pikma.v6i1.1308

14. Rasyid Julianto I. Potensi Aplikasi Twitter Dan Tiktok Sebagai Media Pembelajaran Digital Bahasa Indonesia. *Dialekt J Pendidik Bhs Indones.* 2023;2(2):1-15.

15. Leonita E, Jalinus N. Peran Media Sosial Dalam Upaya Promosi Kesehatan: Tinjauan Literatur. *INVOTEK J Inov Vokasional dan Teknol.* 2018;18(2):25-34. doi:10.24036/invotek.v18i2.261

16. Ukhti Paundria Nagari AES. ENGGUNAAN MEDIA SOSIAL TWITTER (Pengaruh Motivasi Penggunaan Media, Intensitas Terpaan Media dan Persepsi Harga Terhadap Perilaku Konsumtif Berbelanja Online Pada Pengikut Akun @BerburuSale di Media Sosial Twitter. 2020.:1-17.

17. Febryani A, Liza Maulitaya A. Fenomena Curhat Secara Anonim di Akun Menfess Twitter (Studi Etnografi Virtual Pada Akun @collegemenfess). *PADARINGAN (Jurnal Pendidik Sosiol Antropol.* 2023;5(03):154. doi:10.20527/pn.v5i03.9308

18. Zhang N, Teti M, Stanfield K, Campo S. Sharing for Health: A Study of Chinese Adolescents' Experiences and Perspectives on Using Social Network Sites to Share Health Information. *J Transcult Nurs.* 2017;28(4):423-429. doi:10.1177/1043659616680268

19. Yan L (Lucy), Yan X, Tan Y, Sun SX. *Shared Minds: How Patients Use Collaborative Information Sharing via Social Media Platforms.* Vol 28.; 2019. doi:10.1111/poms.12895

20. Haerani A, Aeni SRN, Andini SN. Identifikasi kandungan merkuri (Hg) pada krim pemutih wajah yang dijual di Pasar Andir dengan metode spektrofotometri serapan atom (SSA). *Pharma Xplore J Ilm Farm.* 2022;7(1):1-10. doi:10.36805/farmasi.v7i1.2330

21. Ramadhani A, Sinulingga NB, ... Meninjau Usaha Skincare Abal-Abal Perspektif Hukum Islam. *Dalihan Na Tolu ....* 2022;1(01):27-32.

22. Diningsih A, Syahadat A, Ritonga N, Sitompul MD, Siregar TYH. Review Literatur : Analisis Zat Yang Berbahaya Yang Terdapat Pada Krim Pemutih Dengan Metode AAS dan Spektrofotometri UV-Vis. *J Kesehat Ilm Indones (Indonesian Heal Sci Journal).* 2023;8(2):132-136. doi:10.51933/health.v8i2.1191

23. Nurdiyanti EP, Nur Rohmah FG, Kusumaningtyas M. Perlindungan Konsumen Terhadap Jual Beli Kosmetik Online Illegal Melalui e-Commerce. *J Huk dan HAM Wara Sains.* 2024;3(02):207-214. doi:10.58812/jhhws.v3i02.1108

24. Putri SH, Maharani LO. Penggunaan Media Sosial Twitter @Txtdari Pemerintah Sebagai Saluran Penyebaran Berita Dalam Membentuk Opini Publik. *J Komun dan Desain.* 2021;04(02):79-88.

25. Benetoli A, Chen TF, Aslani P. How patients' use of social media impacts their interactions with healthcare professionals. *Patient Educ Couns.* 2018;101(3):439-444. doi:10.1016/j.pec.2017.08.015

26. Larasaty D. Analisis Freedom of Speech di Media Sosial Twitter dengan Kaitannya terhadap Adab Generasi Muda Islam dalam Berinteraksi di Media Sosial. *Al-I'lam J Komun dan Penyiaran Islam.* 2022;6(1):27. doi:10.31764/jail.v6i1.11141

27. Safinatunnajah ., Amalia I. Pengungkapan Marah di Jejaring Sosial. *TAZKIYA J Psychol.* 2019;7(2):155-175. doi:10.15408/tazkiya.v7i2.13476

28. Gabur DA. Etika Komunikasi di Era Digital dalam Fenomena Hate Speech Netizen Indonesia (Tinjauan dari Perspektif Etika Komunikasi Habermas). *J Poros Polit.* 2023;5(2):1-9. doi:10.32938/jpp.v5i2.4527

29. Ni Putu Gita Padmayani, I Nyoman Putu Budiartha, Ni Made Puspasutari Ujianti. Perlindungan Hukum terhadap Konsumen bagi Pengguna Kosmetik Ilegal yang Diiklankan Influencer di Media Sosial. *J Prefer Huk.* 2022;3(2):312-317. doi:10.55637/jph.3.2.4936.312-317

30. Aini SN, Studi P, Pendidikan T, Tinggi UT. Pemanfaatan Media Sosial Autobase Twitter @Collegemenfess sebagai Pencarian Responden dalam Penelitian Online di Lingkup Perguruan Tinggi. 2023;15(1):138-144.

31. Damayanti Simbolon CA. Penggunaan Komunikasi Media Sosial Twitter di Kalangan Remaja di Kecamatan Cibinong, Kabupaten Bogor. *JISIP J Ilmu Sos dan Ilmu Polit.* 2021;10(3):219-226. doi:10.33366/jisip.v10i3.2356

32. Prybutok GL, Koh C, Prybutok VR. A content relevance model for social media health information. *CIN - Comput Informatics Nurs.* 2014;32(4):189-200. doi:10.1097/CIN.0000000000000041