



Use of Big Data in Political Communication Analysis: Forming a Targeting and Electorate Segmentation Strategy

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ABSTRACT

In this digital era, political communication has become increasingly complex with the emergence of various social media platforms and information technology. This allows for greater interaction between political leaders, parties and the electorate. In this context, the use of Big Data has become crucial in collecting, analyzing and understanding the political behavior patterns of the electorate. This research aims to explore the use of Big Data in the context of political communication analysis, especially in forming targeting and electorate segmentation strategies. Through this approach, it is hoped that an effective method can be found in understanding mass political preferences. This research uses a qualitative and quantitative approach by analyzing Big Data data from various social media platforms, online surveys and other digital data sources. Statistical analysis and machine learning techniques are also used to identify patterns of electoral behavior. The research results show that the use of Big Data in political communication analysis provides deep insight into the preferences and needs of the electorate. By utilizing available data, targeting and electorate segmentation strategies can be prepared more precisely and effectively. The conclusion of this research is the analysis of political communication, the use of Big Data has proven its value in forming targeting and electorate segmentation strategies. With an integrated approach between qualitative and quantitative data, political leaders and parties can better understand political dynamics and increase the effectiveness of communication with the electorate.

Keywords: *Big Data, Political Communication Analysis, Targeting Strategy*

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INTRODUCTION

In the ever-growing digital era, political communication has undergone transformation. Today, social media platforms, online news sites and other digital data sources have become the main channels for political leaders and political parties to interact with the electorate (X. Wang & Yang, 2023). However, with the unstoppable explosion of information, the rise of fake news, and high levels of polarization, the challenges of understanding political preferences and influencing public opinion are becoming increasingly complex (Agarwal et al., 2022). This raises the need for a more sophisticated approach in analyzing political communication to form effective strategies in directing and influencing the electorate (Taylor, 2019). The problem that arises is a lack of deep understanding of political behavior and the needs of the electorate in this increasingly fragmented and complex context. Traditionally, political communication strategies tend to be based on assumptions and experience, with a lack of strong empirical data support (Alam, 2023). Therefore, in-depth research is needed to understand the dynamics of political communication and utilize Big Data as a source of rich and relevant information to form more effective targeting and electorate segmentation strategies.

This research aims to solve this problem by adopting a comprehensive and sophisticated approach in analyzing political communication (Liana Nurhaeti, 2023). Through the use of Big Data, this research will identify patterns of political behavior, public opinion trends, and electorate preferences from various digital data sources (Baraldi et al., 2023). Thus, it is hoped that this research can provide deeper insight into the dynamics of political communication and form more appropriate and relevant strategies in directing and influencing the electorate (Hou et al., 2020). This research was conducted to answer the call for a more sophisticated approach in analyzing political communication and forming appropriate strategies. more effective in directing and influencing the electorate (Mudigonda & Abburi, 2020). By looking at the important role of political communication in modern democracies, as well as the significant impact of effective communication strategies in election outcomes and public policy, this research is aimed at improving understanding and practice in this domain.

Review of Literatur

Targeting Strategy

Targeting strategy in the context of political communication is an approach designed to identify and direct political messages to segments of the electorate most likely to support or be influenced by the message (Kuki et al., 2023). In this discussion, we will explore strategy-targeting in political communication, including approaches, methodologies, benefits, challenges, and examples of successful implementation (Anjana & Mukerji, 2023). One of the main approaches in strategy-targeting is the use of collected electorate data, especially Big Data, to understand the preferences, behavior and needs of different electorates (Zhou, 2022). Data collected

from a variety of sources, including social media, surveys, and electorate databases, can provide deep insight into the composition and dynamics of the electorate (Satish Kumar & Revathy, 2022). By utilizing sophisticated data analysis techniques, such as correlation analysis, cluster analysis, and machine learning techniques, political campaigns can identify different segments of the electorate based on political preferences.

The targeting strategy methodology involves the process of collecting, analyzing and interpreting electoral data to identify segments of the electorate that are most relevant and likely to support a particular political message (Guo et al., 2022). The first step is data collection from various sources, followed by data cleaning and pre-processing to ensure data quality and consistency (Cho et al., 2023). Next, statistical analysis and machine learning techniques are used to identify patterns in the electorate data and group the electorate into different segments based on characteristics (Zhang & Huang, 2022). The main benefit of a targeting strategy is its ability to increase the effectiveness of political communications by directing messages to audiences most likely to be influenced by or support the message (Fu et al., 2023). By presenting relevant and personalized messages to each segment of the electorate, strategic-targeting allows political campaigns to maximize their impact by using limited resources more efficiently (Yao et al., 2023). In addition, targeting strategies can also help build closer relationships between political leaders and the electorate by presenting messages that suit needs.

Electorate Segmentation

Electorate segmentation is the process of dividing a voting population into smaller groups based on similar characteristics, preferences, or behavior (Lang et al., 2023). In the context of political communication, electorate segmentation is important because it allows political candidates and parties to present more precise and relevant political messages to each group, increasing the chances of gaining support and influencing voter behavior. This discussion will explain the meaning of electorate segmentation, commonly used segmentation methods, benefits, challenges, and examples of successful implementation (Khalemsky & Gelbard, 2020). Electorate segmentation begins with a deep understanding of voter characteristics and preferences. This can include demographic factors such as age, gender, education, and income, as well as psychographic factors such as values, attitudes, and lifestyle (Pham et al., 2021). Through analysis of electoral data, whether from surveys, voter registration data, or digital data, relevant characteristics and preferences are selected to differentiate between different voter groups.

Commonly used electorate segmentation methods include segmentation based on demographics, geographic, behavioral, and psychographics (Ma et al., 2019). Demographic segmentation divides the voting population based on characteristics such as age, gender, education, and income (Karthikeyan et al., 2023). Geographic segmentation takes into account the geographic location of voters, allowing political campaigns to tailor messages to local or regional issues. Behavioral segmentation

takes into account voters' political actions or preferences, such as voting history or attendance at political events (Balakrishnan et al., 2021). Meanwhile, segmentation based on psychographics considers voters' values, attitudes and lifestyles, which can provide deep insight into their motivations and needs. The main benefit of electorate segmentation is that it increases the effectiveness of political communication by presenting more precise and relevant messages to each group of voters (Ullah et al., 2023). By understanding voter characteristics and preferences, political campaigns can craft political messages that suit the needs and interests of each group, increasing the likelihood of gaining support and influencing voter behavior. In addition, electorate segmentation also allows political campaigns to maximize the use of resources by directing communication efforts to these groups.

Despite its benefits, electorate segmentation also faces several challenges. One of the main challenges is in ensuring that segmentation is done accurately and relevantly (Ehsani & Hosseini, 2023). Lack of adequate data or errors in selecting voter characteristics and preferences can lead to inappropriate or ineffective segmentation. In addition, electorate segmentation can also raise the risk of excessive self-positioning, where political messages become too specific to certain target groups, which can isolate or exclude other groups (Khalemsky & Gelbard, 2021). Currently, a lot of research has been carried out in the field of political communication analysis and the use of Big Data. However, most still rely on conventional approaches and lack integration in the use of diverse digital data sources (Macgilchrist, 2019). The innovation proposed in this research is an integrated and comprehensive approach in analyzing political communication by utilizing Big Data from various sources (Arzt et al., 2022). It is hoped that this will produce deeper insights and more effective strategies in directing and influencing the electorate.

There are several previous research opinions. The first research according to (Aagaard, 2019), with the research title Big data in political communication. The results of his research stated that political campaigns cannot rely entirely on data technology and big data consultants to produce effective campaigns. Although there may be definite advantages to using big data in campaigns, there are also clear limits to the use of data. The second research according to (Mavriki & Karyda, 2019), with the research title Big data in political communication: implications for group privacy. The results of his research stated that the use of big data analysis technologies in a political context can have severe implications for group privacy, including (political) targeting of particular groups and biased decision making based on group behaviour. We also show that threats to group privacy may have long term implications for society, especially with regard to the impact of populist movements. The third research according to (Dolata & Schrape, 2022), with the research title Internet, Big Data und digitale Plattformen: Politische Ökonomie Kommunikation Regulierung. The results of his research stated that analyze its effects on public and political communication; examine the life cycles and peculiarities of openly structured online communities; and discuss key methodological challenges for empirical social research

associated with the rapidly growing body of digital data (often generated in private-sector contexts).

METHOD

This research uses a combined qualitative and quantitative approach to explore the use of Big Data in political communication analysis to form targeting and electorate segmentation strategies. This approach is designed to provide a comprehensive understanding of the electorate's political behavior, harnessing the power of data at scale to identify relevant patterns and trends. In the initial stage, this research selected several social media platforms and other relevant digital data sources for data collection. Social media platforms such as Twitter, Facebook, and Instagram were chosen because of their popularity and impact in influencing public opinion (Karina et al., 2023). In addition, digital data sources such as online news sites, political discussion forums, and online comment platforms are also taken as additional sources of information.

Once data sources are selected, the next step involves systematic data collection. Data collection is carried out using automatic tools to retrieve data from predetermined platforms. The data captured includes various types of content, including text, images, and videos, related to relevant political topics. After the data is collected, the next step is data cleaning and pre-processing. This process involves removing irrelevant or duplicate data, coding categories, and normalizing the data to ensure consistency and readability of the data. Techniques such as tokenization, stemming, and lemmatization are also used to process text data into a format that can be further processed. After the data is processed, the analysis stage begins with a quantitative approach (Park & Loo, 2022). Descriptive statistical analysis is used to identify general patterns in data, such as keyword frequency, general sentiment, and topic trends. Furthermore, correlation and regression analysis techniques are used to understand the relationship between relevant variables, such as the electorate's response to various political issues. In addition to statistical analysis, quantitative approaches also involve the use of machine learning techniques. Classification and clustering algorithms are used to group electoral data into different segments based on their political behavior patterns. In this way, different political preferences can be identified among the electorate population, which can form the basis for more effective targeting strategies.

Meanwhile, a qualitative approach involves in-depth content analysis of text and visual data. Content analysis is carried out to understand the context and nuances of political messages spread on social media and other digital platforms. This includes identifying dominant political narratives, framing of political issues, and public responses to various political events. Furthermore, the qualitative approach also involves social network analysis to understand the structure and dynamics of political communication among the electorate (B. Wang, 2022). Social network analysis is carried out to identify key influences in political communication networks, as well as

patterns of information and opinion dissemination among the electorate. Finally, the results of the analysis from qualitative and quantitative approaches are combined to formulate a more comprehensive targeting and electorate segmentation strategy. By considering the findings from both approaches, political communication strategies can be designed to reach different segments of the electorate in a more effective and relevant way.

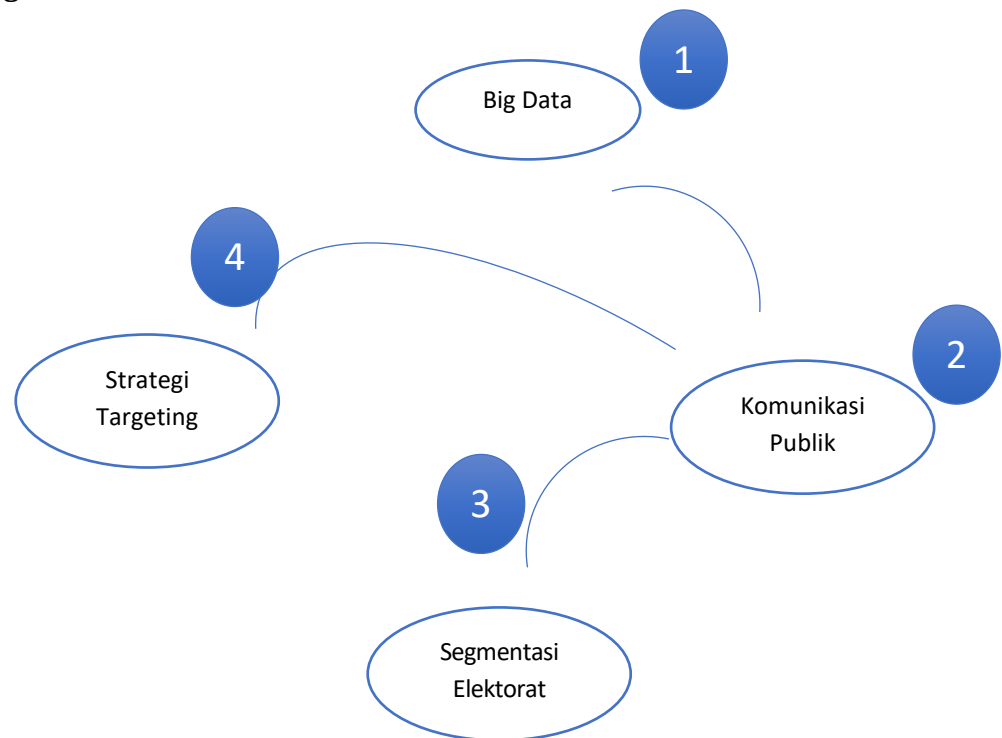
RESULTS AND DISCUSSION

The use of Big Data in Political Communication has become an increasingly important phenomenon in this digital era. With the amount of data continuing to increase exponentially from various sources, including social media, news websites, and other digital platforms, big data processing and analysis has become crucial in understanding political behavior and forming effective communication strategies for political leaders and political parties. One of the main aspects of the use of Big Data in political communication is its ability to collect and analyze data on a large scale from various sources. Social media platforms such as Twitter, Facebook, and Instagram provide a continuous stream of data about the opinions, preferences, and political behavior of millions of users worldwide (Susanti & Ekasani, 2021). Apart from that, online news sites, political blogs, and discussion forums are also valuable data sources for understanding political dynamics and trending issues. By leveraging sophisticated data analysis tools, such as machine learning techniques and social network analysis, Big Data enables the identification of hidden patterns and complex relationships among political variables. One application used in Big Data in political communication is in the formation of targeting and electorate segmentation strategies. With careful analysis of electorate data from various sources, political leaders and campaign consultants can identify distinct segments of the electorate based on political preferences, values, and needs (Cai, 2021). This allows political campaigns to tailor political messages more precisely, and direct campaign resources more effectively to the most viable segments. For example, Big Data data can be used to determine where and when political candidates should campaign, as well as what messages are most effective to convey to each segment of the electorate.

However, the use of Big Data in political communication also raises various ethical and data security issues. One of the main issues is data privacy, where the collection and use of users' personal data by political parties can raise concerns about misuse and privacy violations. Additionally, there are also risks of manipulation and disinformation related to the use of data in political campaigns. By leveraging algorithms and sophisticated data analysis techniques, political parties can create political narratives that suit their targets' preferences, even if that means spreading false or misleading information (Zhao & Ouyang, 2022). Apart from that, the use of Big Data can also create a digital divide in political participation. Although Big Data offers the potential to increase political engagement through more sophisticated data analysis and personalization of political messages, not everyone has the access or skills to take advantage of it. This can lead to inequalities in access to political information and the ability to influence the political process, with people who lack access to

technology and data becoming marginalized in the political process.

Image: Use of Big Data



However, the use of Big Data in political communication also carries the potential to increase transparency and accountability in the political process. By enabling faster and more sophisticated data processing, Big Data enables more accurate analysis of political behavior and the needs of the electorate, which in turn can help in better political decision-making. By publishing data and analytical methodologies, political leaders and political parties can open themselves to public review and criticism, thereby increasing trust and legitimacy in the political process. To address the various ethical and security issues associated with the use of Big Data in political communications, a comprehensive and sustainable regulatory framework is needed. Good regulation should ensure adequate data privacy protection for individuals, while still enabling innovation and useful use of data in the political process (Yang et al., 2023). In addition, transparency and accountability must also be a main focus in regulations, by encouraging political leaders and political parties to open up about the sources and use of data.

The use of Big Data in Forming Targeting and Electorate Segmentation Strategies has become an important topic in the context of modern political communication. In an era where data is available in large quantities from various digital platforms, leveraging Big Data is the key to understanding the preferences, needs and behavior of the electorate in depth. Effective targeting and electorate segmentation strategies enable political candidates and parties to maximize influence in a more efficient and relevant way. Below, we will discuss in depth how the use of Big Data has influenced the formation of targeting and electorate segmentation strategies in contemporary politics. One of the main advantages of using Big Data in forming targeting and electorate segmentation strategies is its ability to collect and

analyze data on a large scale from various sources. Data obtained from social media platforms such as Facebook, Twitter, and Instagram, as well as from online news sites, discussion forums, and online surveys, provides a broad and in-depth view of the electorate's political preferences, opinions, and behavior. By using sophisticated algorithms and data analysis techniques, such as sentiment analysis, social network analysis, and machine learning techniques, Big Data enables the identification of hidden patterns and complex relationships among various political variables.

Firstly Big Data allows more accurate segmentation of the electorate based on political preferences and behavior. By analyzing data from various sources, political leaders and parties can identify different segments of the electorate based on political preferences. For example, data can be used to differentiate between voters who focus on economic, environmental, or other social issues. By understanding the different needs and interests of each segment of the electorate, political campaigns can tailor political messages with more precision and relevance, thereby increasing the likelihood of gaining support from targeted segments of the electorate. Furthermore, the use of Big Data enables more effective targeting strategies in directing campaign resources to segments of the electorate that are most likely to support them. By leveraging data on the political behavior and demographics of different electorates, political campaigns can identify specific geographic areas or demographic groups that share similar political leanings. This allows political campaigns to adjust communications strategies, for example by sending tailored political messages or organizing campaign events in areas with high levels of support (Löffler, 2023). By focusing efforts on those segments of the electorate most likely to support them, political campaigns can maximize their impact by using limited resources more efficiently.

The use of Big Data also enables the personalization of political messages to meet the individual needs and preferences of the electorate. By analyzing data about online behavior and user interactions, political campaigns can create tailored political messages for each individual or target group. For example, political messages can be tailored based on the issues most important to each individual, or even based on the type of content (text, image, or video) that is most effective in attracting attention. By paying attention to individual preferences and needs, political campaigns can create more relevant and engaging experiences for the electorate, thereby increasing the likelihood of engagement and support. However, the use of Big Data in forming targeting and electorate segmentation strategies also raises various challenges and problems that need to be overcome. One of the main challenges is the issue of data privacy and security. With the widespread collection and use of data from a variety of sources, there is a potential risk that personal and sensitive information of individuals could be misused or misused by irresponsible parties. Therefore, it is important to have a strong regulatory framework to protect data privacy and regulate data use in political contexts. In addition, the use of Big Data also raises concerns about transparency and accountability in the political process. With complex data analysis and algorithms that are not always transparent, there is a risk that targeting and electorate segmentation strategies can become unclear or unaccountable. Therefore, it is important to have mechanisms in place that ensure that the use of Big Data in politics remains open to

public review and criticism, and that political leaders and political parties remain accountable for decisions.

CONCLUSIONS

Based on the results and discussion above, it can be concluded that political communication analysis, the use of Big Data has a positive impact in forming targeting strategies and electorate segmentation. With an integrated approach between qualitative and quantitative data, political leaders and parties can better understand political dynamics and increase the effectiveness of communication with the electorate. The use of Big Data in political communications has great potential to change the way political campaigns are conducted, by increasing precision and effectiveness in conveying political messages to the electorate. However, the ethical and security challenges associated with the use of Big Data must also be addressed carefully, to ensure that the benefits of using Big Data do not outweigh the risks. With a balanced and coordinated approach, Big Data can become a powerful tool in strengthening democracy and political participation, rather than being a threat to the integrity of the political process. Furthermore, the use of Big Data in forming targeting strategies and electorate segmentation also has an impact on modern politics. By utilizing data on a large scale from various sources, targeting and electorate segmentation strategies can become more accurate, effective and relevant.

REFERENCES

- Aagaard, P. (2019). Big data in political communication. In J. S. Pedersen & A. Wilkinson (Eds.), *Big Data*. Edward Elgar Publishing. <https://doi.org/10.4337/9781788112352.00020>
- Agarwal, P., Sharma, S., & Matta, P. (2022). Big Data Technologies in UAV's Traffic Management System: Importance, Benefits, Challenges and Applications. In R. Rawat, A. M. Sowjanya, S. I. Patel, V. Jaiswal, I. Khan, & A. Balaram (Eds.), *Autonomous Vehicles Volume 1* (1st ed., pp. 181–201). Wiley. <https://doi.org/10.1002/9781119871989.ch10>
- Alam, A. (2023). Cloud-Based E-learning: Scaffolding the Environment for Adaptive E-learning Ecosystem Based on Cloud Computing Infrastructure. In S. C. Satapathy, J. C.-W. Lin, L. K. Wee, V. Bhateja, & T. M. Rajesh (Eds.), *Computer Communication, Networking and IoT* (Vol. 459, pp. 1–9). Springer Nature Singapore. https://doi.org/10.1007/978-981-19-1976-3_1
- Anjana, & Mukerji, S. (2023). Strategic Planning and Policy Framework for Implementation of Blockchain Technology in Education in India: In G. Kurubacak, R. C. Sharma, & H. Yildirim (Eds.), *Advances in Electronic Government, Digital Divide, and Regional Development* (pp. 51–68). IGI Global. <https://doi.org/10.4018/978-1-6684-4153-4.ch003>
- Arzt, M., Deschamps, J., Schmied, C., Pietzsch, T., Schmidt, D., Tomancak, P., Haase, R., & Jug, F. (2022). LABKIT: Labeling and Segmentation Toolkit for Big Image Data. *Frontiers in Computer Science*, 4, 777728. <https://doi.org/10.3389/fcomp.2022.777728>

- Balakrishnan, R., Valdés Hernández, M. D. C., & Farrall, A. J. (2021). Automatic segmentation of white matter hyperintensities from brain magnetic resonance images in the era of deep learning and big data – A systematic review. *Computerized Medical Imaging and Graphics*, 88, 101867. <https://doi.org/10.1016/j.compmedimag.2021.101867>
- Baraldi, A., Sapia, L. D., Tiede, D., Sudmanns, M., Augustin, H. L., & Lang, S. (2023). Innovative Analysis Ready Data (ARD) product and process requirements, software system design, algorithms and implementation at the midstream as *necessary-but-not-sufficient* precondition of the downstream in a new notion of Space Economy 4.0 - Part 1: Problem background in Artificial General Intelligence (AGI). *Big Earth Data*, 7(3), 455–693. <https://doi.org/10.1080/20964471.2021.2017549>
- Cai, G. (2021). Accurate mining of location data in the communication field based on big data. *Journal of High Speed Networks*, 27(3), 251–264. <https://doi.org/10.3233/JHS-210665>
- Cho, E.-J., Jeong, T.-D., Kim, S., Park, H.-D., Yun, Y.-M., Chun, S., & Min, W.-K. (2023). A New Strategy for Evaluating the Quality of Laboratory Results for Big Data Research: Using External Quality Assessment Survey Data (2010–2020). *Annals of Laboratory Medicine*, 43(5), 425–433. <https://doi.org/10.3343/alm.2023.43.5.425>
- Dolata, U., & Schrape, J.-F. (2022). Internet, Big Data und digitale Plattformen: Politische Ökonomie – Kommunikation – Regulierung: Eine kurze Einführung in das Sonderheft. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 74(S1), 1–9. <https://doi.org/10.1007/s11577-022-00843-6>
- Ehsani, F., & Hosseini, M. (2023). Consumer Segmentation Based on Location and Timing Dimensions Using Big Data from Business-to-Customer Retailing Marketplaces. *Big Data*, big.2022.0307. <https://doi.org/10.1089/big.2022.0307>
- Fu, Y., Sun, X., & Wang, W. (2023). The Optimization of Global Organizational Communication for Enterprise Supply Organization Management by Using Big Data Text Mining: *Journal of Global Information Management*, 31(3), 1–17. <https://doi.org/10.4018/JGIM.324608>
- Guo, Y., Chen, Y., Xie, Y., & Ban, X. (2022). An Effective Student Grouping and Course Recommendation Strategy Based on Big Data in Education. *Information*, 13(4), 197. <https://doi.org/10.3390/info13040197>
- Hou, L., Ma, C., & Yang, L. (2020). A novel encryption algorithm for unstructured big data in wireless communication network. *International Journal of Internet Protocol Technology*, 13(3), 124. <https://doi.org/10.1504/IJIPT.2020.107970>
- Karina, D., Rishi, P., & Rashmi, G. (2023). Social Media Utilization for Student Learning Success Effectiveness. *World Psychology*, 2(1), 54–64. <https://doi.org/10.55849/wp.v2i1.392>
- Karthikeyan, Khang, A., & Krishnaveni, K. (2023). Big Data Opportunities: Lung Image Segmentation for a Coronary Artery Diseases Monitoring System. In A. Khang (Ed.), *Advances in Medical Technologies and Clinical Practice* (pp. 314–323). IGI Global. <https://doi.org/10.4018/979-8-3693-0876-9.ch019>
- Khalemsky, A., & Gelbard, R. (2020). A dynamic classification unit for online segmentation of big data via small data buffers. *Decision Support Systems*, 128, 113157. <https://doi.org/10.1016/j.dss.2019.113157>

- Khalemsky, A., & Gelbard, R. (2021). ExpanDrogram: Dynamic Visualization of Big Data Segmentation over Time. *Journal of Data and Information Quality*, 13(2), 1–27. <https://doi.org/10.1145/3434778>
- Kuki, N., Walmsley, D. L., Kanai, K., Takechi, S., Yoshida, M., Murakami, R., Takano, K., Tominaga, Y., Takahashi, M., Ito, S., Nakao, N., Angove, H., Baker, L. M., Carter, E., Dokurno, P., Le Strat, L., Macias, A. T., Molyneaux, C.-A., Murray, J. B., ... Hubbard, R. E. (2023). A covalent fragment-based strategy targeting a novel cysteine to inhibit activity of mutant EGFR kinase. *RSC Medicinal Chemistry*, 14(12), 2731–2737. <https://doi.org/10.1039/D3MD000439B>
- Lang, L., Zhou, S., Zhong, M., Sun, G., Pan, B., & Guo, P. (2023). A Big Data Based Dynamic Weight Approach for RFM Segmentation. *Computers, Materials & Continua*, 74(2), 3503–3513. <https://doi.org/10.32604/cmc.2023.023596>
- Liana Nurhaeti. (2023). Information And Communication Technology- Based Learning Models In Islamic Religious Education. *DIROSAT: Journal of Education, Social Sciences & Humanities*, 1(1), 1–6. <https://doi.org/10.58355/dirosat.v1i1.1>
- Löffler, N. (2023). Trusting tech firms' big data for political microtargeting? A qualitative analysis of parties' communication managers risk and trust perceptions. *Journal of Information Technology & Politics*, 1–15. <https://doi.org/10.1080/19331681.2023.2264299>
- Ma, F., Gao, F., Sun, J., Zhou, H., & Hussain, A. (2019). Attention Graph Convolution Network for Image Segmentation in Big SAR Imagery Data. *Remote Sensing*, 11(21), 2586. <https://doi.org/10.3390/rs11212586>
- Macgilchrist, F. (2019). Cruel optimism in edtech: When the digital data practices of educational technology providers inadvertently hinder educational equity. *Learning, Media and Technology*, 44(1), 77–86. <https://doi.org/10.1080/17439884.2018.1556217>
- Mavriki, P., & Karyda, M. (2019). Big data in political communication: Implications for group privacy. *International Journal of Electronic Governance*, 11(3/4), 289. <https://doi.org/10.1504/IJEG.2019.103716>
- Mudigonda, P., & Abburi, S. K. (2020). A Survey: 5G in IoT is a Boon for Big Data Communication and Its Security. In A. Kumar, M. Paprzycki, & V. K. Gunjan (Eds.), *ICDSMLA 2019* (Vol. 601, pp. 318–327). Springer Singapore. https://doi.org/10.1007/978-981-15-1420-3_33
- Park, S.-Y., & Loo, B. T. (2022). The Use of Crowdfunding and Social Media Platforms in Strategic Start-up Communication: A Big-data Analysis. *International Journal of Strategic Communication*, 16(2), 313–331. <https://doi.org/10.1080/1553118X.2022.2032079>
- Pham, T. C., Nguyen, V.-N., Choi, Y., Lee, S., & Yoon, J. (2021). Recent Strategies to Develop Innovative Photosensitizers for Enhanced Photodynamic Therapy. *Chemical Reviews*, 121(21), 13454–13619. <https://doi.org/10.1021/acs.chemrev.1c00381>
- Satish Kumar, A., & Revathy, S. (2022). A hybrid soft computing with big data analytics based protection and recovery strategy for security enhancement in large scale real world online social networks. *Theoretical Computer Science*, 927, 15–30. <https://doi.org/10.1016/j.tcs.2022.05.018>
- Susanti, L. E., & Ekasani, K. A. (2021). Facebook Automatic Translation: Ketidakkonsistensian Penyampaian Arti Bahasa bagi Penggunaanya. *Jurnal*

- Kajian Bahasa, Sastra Dan Pengajaran (KIBASP)*, 5(1), 107–120. <https://doi.org/10.31539/kibasp.v5i1.2694>
- Taylor, C. R. (2019). Editorial: Artificial intelligence, customized communications, privacy, and the General Data Protection Regulation (GDPR). *International Journal of Advertising*, 38(5), 649–650. <https://doi.org/10.1080/02650487.2019.1618032>
- Ullah, F., Salam, A., Abrar, M., & Amin, F. (2023). Brain Tumor Segmentation Using a Patch-Based Convolutional Neural Network: A Big Data Analysis Approach. *Mathematics*, 11(7), 1635. <https://doi.org/10.3390/math11071635>
- Wang, B. (2022). Wireless Multifunctional Display Platform for Visual Communication Design Based on IoT Big Data. *Mobile Information Systems*, 2022, 1–12. <https://doi.org/10.1155/2022/9270271>
- Wang, X., & Yang, J. (2023). A Big Data-Driven Deep Transfer Learning Approach for Path Loss Prediction in Mobile Communications. *Proceedings of the 2023 9th International Conference on Computing and Artificial Intelligence*, 584–588. <https://doi.org/10.1145/3594315.3594375>
- Yang, B., Xiong, X., Liu, H., Jia, Y., Gao, Y., Tolba, A., & Zhang, X. (2023). Unmanned Aerial Vehicle Assisted Post-Disaster Communication Coverage Optimization Based on Internet of Things Big Data Analysis. *Sensors*, 23(15), 6795. <https://doi.org/10.3390/s23156795>
- Yao, Y., Feng, C., Xie, J., Yan, X., Guan, Q., Han, J., Zhang, J., Ren, S., Liang, Y., & Luo, P. (2023). A site selection framework for urban power substation at micro-scale using spatial optimization strategy and geospatial big data. *Transactions in GIS*, 27(6), 1662–1679. <https://doi.org/10.1111/tgis.13093>
- Zhang, D., & Huang, M. (2022). A Precision Marketing Strategy of e-Commerce Platform Based on Consumer Behavior Analysis in the Era of Big Data. *Mathematical Problems in Engineering*, 2022, 1–8. <https://doi.org/10.1155/2022/8580561>
- Zhao, Y., & Ouyang, W. (2022). Wireless Communication Network Security System Based on Big Data Information Transmission Technology. *Wireless Communications and Mobile Computing*, 2022, 1–6. <https://doi.org/10.1155/2022/1066331>
- Zhou, R. (2022). A Heuristic Task Scheduling Strategy for Intelligent Manufacturing in the Big Data-Driven Fog Computing Environment. *Mobile Information Systems*, 2022, 1–10. <https://doi.org/10.1155/2022/5830760>

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