TELKOM UNIVERSITY'S ENVIRONMENTAL COMMUNICATION STRATEGY AS A GREEN CAMPUS

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Abstract
Environmental problems that are increasing every year with significant levels of pollution and water pollution can disrupt the learning system and require steps from educators to reduce and create a healthy environment. The emergence of Green Campus is a university's effort to integrate sustainability principles in all operational and academic aspects. The focus of the research is to find out Telkom University's environmental communication strategy in implementing green campus. Qualitative research methods were used with in-depth interviews with key informants, expert informants, and supporting informants, as well as observation and literature study.The results showed that Telkom University has carried out various environmental communication strategies through various media such as social media and electronic flyers. However, the communication still faces challenges related to the level of awareness of the academic community and the lack of formal documentation in the evaluation. Nonetheless, this initiative shows economic potential through circular economy-based waste management and ecosystem development. This research recommends improving communication strategies that are more structured and involve all elements of the campus to optimally achieve Green Campus goals.

Keywords: *Environmental Communication Strategy, Green Campus, Telkom University's Green Campus, Environment.*

I. INTRODUCTION

Over the years environmental aspect has become an important topic of human learning. It is embedded in environmental study that is closely related to how humans respond to environmental damage. Moreover, the conduciveness of learning that affects the quality of human life is highly dependent on the environmental situation. Environmental damage that occurs at the global and national levels has a major influence on the human learning system. Starting from air pollution, traffic jams, and forest destruction; all affect the quality of human life including the learning process. According to UNICEF (2024), air pollution affects human health and is the second global risk factor causing death. Globally, Indonesia is also the largest contributor to pollution along with China, India, Pakistan, Bangladesh, and Nigeria, contributing 75% of the total global air pollution burden (BBC, 2023). Due to the high level of air pollution and the large population, this is a problem that impacts human life in the country and is on the list of the biggest threats in the world. It is also critically emphasized by Sipayung Ronald Sofyan G.S. (2023) Air pollution in Indonesia does not meet the safe threshold according to WHO guidelines. Indonesia's air pollution ranking is ranked 1st in Southeast Asia and 17th most polluted country in the world Ellyvon Pranita (2022).

In addition to unhealthy air pollution, water pollution is also a factor in environmental degradation and low health levels. Water is a source of human life but can also be a big problem with deteriorating water quality, even for human life, water pollution has a major impact on the growth of agricultural food crops. Bandung is one of the cities in Indonesia that experiences environmental degradation from year to year. According to Rajul (2023), waste in the Bandung Basin when experiencing a fire becomes a polemic that there is no safe landfill operation. waste management using a transport and disposal system without any sorting of waste disposed of in the landfill. Water management is still poor by polluting rivers and reducing river quality. According to the air monitor on the IQAir Map, the air quality in Bandung is unhealthy for sensitive groups which can cause irritation and respiratory problems as the air quality continues to deteriorate according to figure 1.2. This causes the quality of learning to be impacted by health problems that can be experienced by students in Bandung. Academic and non-academic activities will cause concern due to the air quality and lack of green open spaces.

Figure 1 Bandung Air Monitor (IQair 2024)

Apart from having complex air pollution issues, river water pollution in Bandung also has a significant problem with rivers having a water quality in 2021 of 41.5 or poor category. Of the 24 rivers monitored in Bandung City, 21 are categorized as lightly polluted (Wamad, 2022). One of the areas that produce air pollution is the Bojongsoang area, which is the source of air pollution in this area. The dense population, with the number of motorized vehicles, industry, and agriculture being the main reasons, Factories and industries around Bojongsoang pollute the air endanger public health and affect the quality of green spaces (Kasya, 2023).

With the environmental problems that occur in Bandung, especially in the Bojongsoang area, the quality of the learning system is significantly affected.

To achieve comprehensive environmental education, a sustainable development system is needed, known as the Sustainable Development Goals (SDGs). SDGs are one of the important agendas developed by many countries to achieve global human welfare. The agenda is a program on sustainable development, which has 17 goals and 169 measurable targets. The SDGs have been confirmed and approved by 193 member states, including Indonesia. The 17 goals or pillars of the SGDs include no poverty, no hunger, good health and well-being, quality education, gender equality, sanitation and clean water, affordable and clean energy, decent work and economic growth, industry, innovation, infrastructure, reducing inequality, sustainable cities and communities (Maryanti et al., 2022). To produce good health and welfare, programs that support sustainability are needed according to Figure 1.3.

Figure 2 SDGs Goals (The united nations 2024)

To support good health and well-being, universities have an important role to play in implementing the Sustainable Development Goals (SDGs) and contribute greatly to society as environmental issues receive little attention. Therefore, there is an initiative from campuses to create a healthier and environmentally based learning environment that focuses on preserving and implementing the SDGs. This initiative called the Green Campus Program, was realized as a form of concern and contribution to the surrounding environment and the creation of green open spaces. In 2010, Universitas Indonesia (UI) established the UI Green Metric World University Ranking as a platform for universities around the world to share information and practices to achieve sustainability on campuses in Indonesia (Tiyarattanachai & Hollmann, 2016). Telkom University is ranked 9th on a national scale in implementing this.

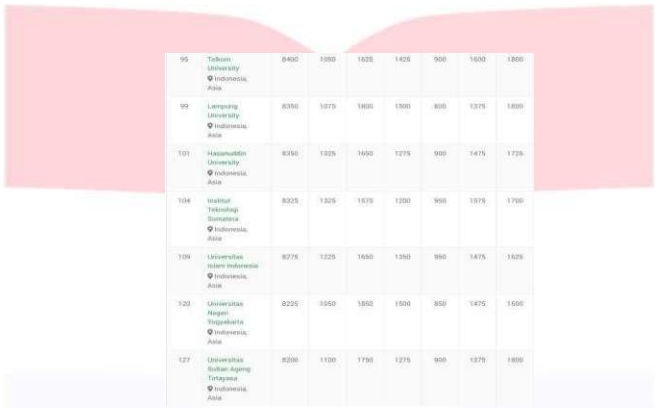

Figure 3 Telkom University Ranking (UI Green Metric 2024)

As one of the private campuses in Indonesia, Telkom University with the 1st rank of private campuses in the Indonesia Green Campus Program sector according to UI Green Metric World University meets several criteria for implementing green open space. Energy and natural resource management prioritizes energy and natural resource management by saving water, recycling waste, and utilizing natural resources efficiently. Building arrangement with infrastructure arrangement for its development. Environmentally friendly transportation for Telkom University Academic Community. Promoting environmental awareness with services and educational campaigns about environmental sustainability. Curriculum education is oriented toward a Green Campus. These applications have become Telkom University as a concept with a ranking of 1 private campus that implements the Green Campus Program (Ridha, 2024).

The learning environment at Telkom University also provides an overview of the implementation of a healthy learning environment for the academic community. Green open spaces that utilize water catchment areas and environmental management with good commitment. Various facilities are provided to support comfortable and quiet learning activities ranging from dormitories, dining, and recreation to sports facilities. In addition, the utilization of this green campus can have long-term benefits such as saving operational expenses from electricity and water payments, increasing campus image, increasing student interest in environmental issues, and preparing students for the future to play an active role in preserving the earth in the future (Meilina, 2024). The Green Campus program is also realized by the joint commitment of university stakeholders to maintain the stability of green open spaces for the community and learners.

Causing the destruction of green open space and impacting comprehensive learning activities. The justification for this research took place at Telkom University because of the dense population in the Bojongsoang area and the limited green open space in the area. In addition, Telkom University is the best private campus in implementing this program. Therefore, the research took the title “Telkom University’s Environmental Communication Strategy As A Green Campus”.

II. LITERATURE REVIEW

A. Communication

The word communication etymologically is a translation of the English word communication. Communication itself comes from the Latin word communis which means “the same or the same meaning”, communico, or communicare which means “to make common” (who). The first term (communis) is the most widely used as the origin of the word communication. Communication is the process of sharing meaning in the form of communication messages between communication actors. Communication messages can be ideas or ideas of thoughts that are realized with symbols that contain meaning and are shared by communication actor (Haryanto, 2021).

B. Environment

The environment is a combination of physical conditions that include the state of natural resources such as land, water, solar energy, minerals, and the flora and fauna that grow on the land and in the ocean, with institutions that include human creations such as decisions on how to use the physical environment. The environment can be defined as the biological and environmental elements that surround an individual organism or species, including many that contribute to its well-being. “Environment” can also be defined as all the natural components of the Earth (air, water, soil, vegetation, animals, etc.) as well as all the processes that occur within and between these components (Effendi et al., 2018).

From this definition, Effendi et al. (2018) Explains that there are 3 types of living environment, namely the natural environment which consists of various natural resources and ecosystems with their components, both physical and biological. The natural environment is dynamic because it has a very high level of organism heterogeneity, the built

environment includes a man-made environment built with the help or input of technology, both simple technology and modern technology, and the social environment is formed due to social interactions in society. This social environment can form a certain built environment characterized by human behaviour as a social being.

C. Environmental Communication

Pezullo & Cox (2018:34-35) In the definition of Communication in point 1.1.3. The definition of environmental communication in this study refers to the understanding of Pezullo & Cox (2018:34-35) Environmental communication is a pragmatic and constitutive means of providing environmental understanding to the public. The relationship between humans and nature is a symbolic medium used to create environmental problems and negotiate different responses to environmental problems that occur. Pezullo & Cox (2018:34-35) assert that environmental communication is a useful and constitutive instrument that helps people comprehend their surroundings. According to this concept, environmental communication serves as a medium that actively shapes meanings and values pertaining to human interactions with nature in addition to being a tool for disseminating information. It is believed that this interaction serves as a symbolic conduit for generating environmental challenges and negotiating various solutions to new problems. Naming, interpreting, orienting, and negotiating ecological interactions are all part of the constitutive function of environmental communication. This implies that determining what constitutes an environmental issue is a significant function of environmental communication. For example, communication can encourage raise public awareness of environmental problems and issues and emphasize the importance of conserving forests. This process involves elaborate verbal and nonverbal exchanges, such as activism, social campaigns, and scientific discourse.

D. Environmental Communication Strategy

In its application, the communication strategy has success criteria with the peculiarities of each development innovation. According to Hubies in Kadarisman (2019), the success criteria of communication strategies can be seen from the point of view of the target audience and development communication actors. From the audience's point of view, among others, it is characterized by the elements of understanding, concern, and the ability of the community to select and implement various innovations and active commitment and agreement to improve the success of various dimensions of development programs and a better life. Development is a joint effort of various parties in achieving planned goals, from the planning to the execution stage, many parties are involved.

Various strategies to deal with environmental problems are not easy to do, because not all communicators can receive information from communicators well. However, significant steps are still needed so that communication about the environment can be carried out by communicators to communicators to produce messages transparently andwell to reduce disagreements between the two parties. According to Wahyudin (2024:4-6), to produce an ideal communication strategy, 10 environmental communication strategies are needed, namely:

1. Conduct a situation analysis and identify problems
2. Analyse the supervision of groups involved in communication
3. Conduct objective communication to increase knowledge and influence the behaviour of communicants
4. Develop a communication strategy based on the data obtained
5. Encourage and direct the community
6. Selecting the media to be used
7. Prepare the message that will be delivered to the communicant
8. Conduct media production and pretest
9. Conduct information dissemination through the media and implement it
10. Carry out monitoring and evaluation as well as the implementation of documentation of the communication strategy that has been implemented.

E. Sustainable Development Goals (SDGs)

Sustainable development is essentially about ensuring that future generations can enjoy the necessities of life. There are three main pillars in sustainable development, namely the social, economic, and environmental pillars, which are supported by the governance pillar (Alisjahbana, 2018). The SDGs adhere to the pillars called the 5Ps mentioned in the United Nations to achieve its goals (Alisjahbana, 2018) Namely:

1. People
2. Planet
3. Prosperity
4. Peace
5. Partnership

With a strong commitment to sustainable development, it is hoped that the pillars of the SDGs will be able to maintain the stability of future generations and be able to provide a stable environment in every country that implements sustainable development.

F. Green Campus

The focus of the green campus program is how the campus can function as a safe, sterile, shaded (green), beautiful, and healthy place to learn. Universities in Indonesia with the ranking of Universitas Indonesia were named the Best University in the World in 2010 by the "UI Green Metric World University Ranking", which aims to identify campus awareness of the concept of sustainability (Bakaruddin et al., 2023). There are 3 important aspects in UI Green Metric World University indicated by environmental, economic, and social aspects as shown in Figure 2.3:

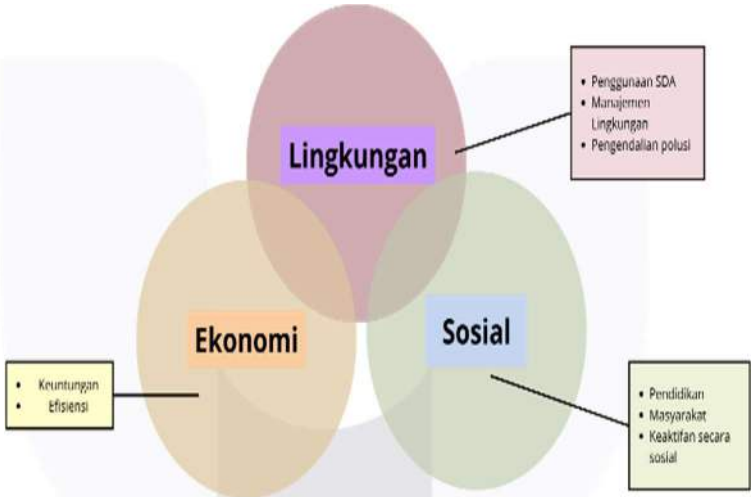

Figure 4 UI Green Metrics Component (Bakaruddin et al. 2023a)

By implementing aspects of the three components of UI Green Metric, Telkom University has taken a big role in realizing the green campus program. Telkom University has succeeded in creating an ideal and sustainable learning environment through programs that focus on environmental stewardship, correlation between parts of society, and transmission of social heritage.

III. RESEARCH METHOD

Based on the actual events studied, this research uses qualitative descriptive techniques (Nasution, 2023:34). According to Creswell (In nasution, 2023:34),states that qualitative research serves to explore social issues or phenomena and develop a deep understanding of them. Furthermore, a case study is a technique that consists of description, analysis, interpretation, and assessment of descriptive data (Nasution, 2023). Information is collected and presented in a detailed and comprehensive manner, often drawn from specific case studies. This method aims to understand in detail the context, process, or phenomenon related to the research being conducted. This approach seeks to gain a more thorough and directed understanding of a particular phenomenon to provide deeper insight and focus on a particular situation as the object of research.

According to Nasution (2023:34-43), qualitative research focuses not only on data collection but also on understanding the social context behind the phenomenon. This makes researchers the main instrument in the data collection process, so they play an active role in extracting information from participants and the surrounding environment. Thus, this research is expected to provide a more holistic picture of the dynamics that occur in the context of a green campus and its impact on the ecological awareness of the academic community and the community around Telkom University.

.Paradigm is a research perspective used by researchers in seeing reality, studying phenomena, and the ways used in interpreting research results (Pahleviannur et al., 2022). This research uses the interpretivism or post-positivism paradigm. This approach is inductive, where the data obtained is qualitative and requires interpretation for a deeper understanding (Nasution, 2023:34). The interpretive paradigm as a research paradigm can view reality or objects as a whole and cannot be separated into several partial variables (Nasution, 2023:34). Therefore, the paradigm in this study can be explained by how the Telkom University Green Campus Program uses environmental communication strategies to spread the Green Campus Program in the campus environment.

1. Research subjects

   This research focuses on the Green Campus Program of Telkom University as the main subject.

2. Research objects

   The object of this research is the environmental communication strategy of the Green Campus Program at Telkom University in disseminating the Green Campus Program at Telkom University.

3. Research location

   The location of this research was conducted at Telkom University, Bandung Regency, West Java, through observations and interviews with informants.

IV. RESULT AND DISCUSSION

A. Conduct A Situation Anlalysis And Identify Problems

A crucial first step in developing a communication strategy is to conduct a comprehensive situation analysis and identify the core issues to be addressed. This process aims to deeply understand the environmental context, recognize relevant issues, and map the potential and challenges that may arise in the implementation of the communication strategy. In line with this principle, the results of interviews with key informant 1 indicate that Green Campus Telkom University conducts a situation analysis and problem identification as a foundation before formulating actions to overcome environmental problems in the campus environment

B. Analyze The Supervision Of Groups Involved In Communication

The next crucial stage in designing an communication strategy is to conduct an in-depth analysis of the audience or communicants who are the target of the message. A comprehensive understanding of who will receive the information, including the characteristics of the community and civitas with demographic (age, major, location), psychographic (values, interests, lifestyle), information needs, and their preferences in receiving and responding to messages, becomes an important foundation in determining the right communication approach**.**

C. **C**onduct Objective Communication To Increase Knowledge And Influence The Behaviour Of Communicants

Communication in an environmental context should ideally be based on accurate data and facts. The goal is to convey correct and relevant information, which in turn is expected to influence the mindset and encourage changes in audience behavior towards a more positive and environmentally responsible direction..

D. Develop A Communication Strategy Based On The Data Obtained

After the situation analysis and audience identification stages, the next essential step in communication strategy is to utilize the data that has been collected to design a targeted, efficient, and communication approach. This data becomes the foundation for crafting messages, choosing communication channels, and determining the most optimal delivery time to reach and influence the target audience.

E. Encourage And Direct The Community

This stage involves persuasive communication efforts that go beyond simply conveying information. However, it also involves individual interaction with the message that has been conveyed. The goal is to motivate and direct communicants to take concrete actions that are in line with the communication objectives of the program, especially in the context of green campus environmental initiatives.

F. Selecting The Media To Be Used

The selection of communication media is a crucial strategic step in ensuring the message can reach the audience. The decision on which media to use (print, electronic, digital, social media, or a combination) should be based on an in-depth understanding of the characteristics of the target audience, including their preferences in consuming information and the media in delivering the message.

G. Prepare The Message That Will Be Delivered To The Communicant

Messaging is at the core of the entire communication process. An message must be carefully designed, ensuring clarity, conciseness, appeal and appropriateness to the context and cultural background of the audience. The quality of the message directly determines the success of information delivery and the achievement of communication objectives**.**

H. Conduct Media Production And *Pretest*

Once the message and communication medium have been selected, the next step is to produce the communication materials that will be delivered to the audience. These materials can be in various formats, such as posters, videos, brochures, social media content, and others. To ensure the materials produced, it is important to conduct a pretest or trial to a small portion of the target audience. The pretest aims to identify whether the materials are easy to understand**,** interesting, relevant and well received before they are widely disseminated**.**

I. Conduct Information Dissemination Through The Media And Implement It

The implementation stage of a communication strategy involves disseminating the materials that have been produced to the target audience through pre-selected media channels. The success of this stage depends on the accuracy of media selection and the message delivery in order to reach a wide audience and in accordance with their characteristics**.**

J. Carry Out Monitoring And Evaluation As Well As The Implementation Of Documentation Of The Communication Strategy That Has Been Implemented

A crucial final stage in the communication strategy cycle is the implementation of monitoring and evaluation, as well as documentation of the entire process. Monitoring aims to oversee the implementation of the communication strategy on an ongoing basis, identify potential obstacles, and make adjustments if necessary. Evaluation is conducted to assess the communication strategy in achieving the set objectives. Documentation of the entire process, including planning, implementation, and evaluation results, is essential for learning and improving future strategies**.**

K. Green Campus

The focus of the Green Campus program is how the campus can function as a safe, sterile, green, beautiful, and healthy place of learning. The university in Indonesia is ranked as the No. 1 best private university in implementing a green campus in 2024 by the "UI Green Metric World University Ranking" which aims to identify campus awareness of sustainability concepts. According to Bakaruddin et al. (2023), there are 3 important aspects in UI Green Metric World University which are shown by environmental, economic, and social aspects.

V. CONCLUSION AND SUGGESTION

A. Conclusion

Based on the results of research conducted by researchers, it can be concluded that Telkom University's Green Campus has shown the implementation of environmental communication strategies in each program created and several facilities produced, followed by significant efforts in adopting Green Campus principles. Various initiatives have been implemented, ranging from more structured waste management with university self-management to campus-wide energy conservation efforts. These programs reflect the university's commitment to reducing its environmental impact and creating a more sustainable environment for the entire community. However, these initiatives are greatly influenced by the active participation and deep understanding of the entire academic community as well as the community, and some environmental communication strategies that must be improved through concrete actions of environmental awareness movements and educational information to the community and society.

Despite progress, the study also identified areas that require further attention. Stronger coordination of management units, an integrated monitoring system with multiple managers, and continuous evaluation are key to ensuring the long-term success of Telkom University's Green Campus. In addition, broadening the focus of Green Campus initiatives to cover broader environmental issues, such as water resource management, natural resources, and greenhouse gas emission reduction, will strengthen the university's contribution to regional environmental sustainability. Synergy with external parties, including the government and surrounding communities, is also important to create a more significant impact.

B. Suggestion

Based on the research that has been done, the researcher provides the following suggestions:

a. Academic Suggestion

This research is expected to provide an understanding of further research related to environmental communication strategies involving 10 components. Future research can consider analyzing the environmental communication strategy implemented by Green Campus Telkom University using quantitative methods to determine the effect of Green Campus Telkom University's environmental communication strategy in optimizing the implementation of the green campus in the environmental, economic, and social sectors. Future research can examine comparative studies.

of the effectiveness of media platforms in disseminating environmental information, such as websites, social media, or other platforms.

b. Practical Suggestion

Green Campus Telkom University can consider establishing massive collaboration with several organizations that are integrated with the community and society in the process of delivering environmental communication strategies. Because environmental messages need to be adapted to the current developments and needs of the community and society. By conducting massive collaboration, Green Campus Telkom University can find out some of the obstacles related to environmental issues that become urgent every month, and with this collaboration, it can show the real actions of the green campus in active participation to the community and society.The messages conveyed by the green campus can provide educational delivery in an effort to educate the environment to community and society, and a more active platform in the process of delivering environmental and green campus messages**.**

REFERENCE

Abakumov, E., & Beresten, S. (2023). Green Campus as a Part of Environmental Management of St. Petersburg State University. Sustainability (Switzerland), 15(16). https://doi.org/10.3390/su151612515

Bakaruddin, B., Afriyeni, A., & Algusri, J. (2023c). Kampus Hijau Berkelanjutan Dalam Perspektif Pendidikan Lingkungan. Jurnal Akuntansi Dan Ekonomika, 13(1), 99–106. https://doi.org/10.37859/jae.v13i1.4723

BBC. (2023, August 29). Indonesia masuk "enam negara paling berkontribusi terhadap polusi udara global", warga akan gugat pemerintah dan industri. BBC. https://www.bbc.com/indonesia/articles/c72enp76622o

Effendi, R., Salsabila, H., & Malik, A. (2018). PEMAHAMAN TENTANG LINGKUNGAN BERKELANJUTAN. MODUL, 18(2), 75. https://doi.org/10.14710/mdl.18.2.2018.75-82

Ellyvon Pranita, H. K. N. S. (2022, April 7). Polusi Udara di Indonesia Peringkat 1 di Asia Tenggara dan Peringkat 17 Negara Paling Berpolusi di Dunia . Kompas. https://www.kompas.com/sains/read/2022/04/07/123100123/polusi-udara-di-indonesia-peringkat-1-di-asia-tenggara-dan-peringkat-17

Fachrudin, H. T., & Fachrudin, K. A. (2021). The relationship between green behaviour and green campus principles: A literature review. IOP Conference Series: Materials Science and Engineering, 1122(1), 012028. https://doi.org/10.1088/1757-899x/1122/1/012028

Gholami, H., Bachok, M. F., Saman, M. Z. M., Streimikiene, D., Sharif, S., & Zakuan, N. (2020). An ISM approach for the barrier analysis in implementing green campus operations: Towards higher education sustainability. Sustainability (Switzerland), 12(1). https://doi.org/10.3390/su12010363

Green Campus Telkom University. (2013).

Haryanto, D. (2021). Pengantar Ilmu Komunikasi.

Heryana, A. (2023). Informan dan Pemilihan Informan dalam Penelitian Kualitatif. https://www.researchgate.net/publication/329351816

IQair. (2024). Indonesia air monitor. https://www.iqair.com/earth

Kadarisman, A. (2019). Komunikasi Lingkungan. Simbiosa Rekatama Media.

Kasya, Z. (2023, April 10). Persepsi Mahasiswa Telkom University terhadap Polusi Udara di Kecamatan Bojongsoang: Analisis Faktor Penyebab dan Upaya Pengurangan Dampaknya. Kompasiana. https://www.kompasiana.com/zahrakasya/643388904addee0a6f7a46b4/persepsi-mahasiswa-telkom-university-terhadap-polusi-udara-di-kecamatan-bojongsoang-analisis-faktor-penyebab-dan-upaya-pengurangan-dampaknya

Kurniawan, W. (2023, September 25). Dampak polusi udara bagi kesehatan mental kita: dari depresi hingga bunuh diri. Theconversation. https://theconversation.com/dampak-polusi-udara-bagi-kesehatan-mental-kita-dari-depresi-hingga-bunuh-diri-214072

lahitani, S. (2024, September 4). Menciptakan Masa Depan Hijau, Peran Vital Pendidikan Lingkungan di Indonesia. Liputan6. https://www.liputan6.com/citizen6/read/5693308/menciptakan-masa-depan-hijau-peran-vital-pendidikan-lingkungan-di-indonesia?page=2

Luh, N., Deviyanti, P., & Pariwisata, J. (2024). SKRIPSI HALAMAN SAMPUL PENERAPAN GREEN CAMPUS DALAM MENINGKATKAN GREEN AWARENESS DAN ECO FRIENDLY DI KAMPUS KANIVA.

Maryanti, R., Rahayu, I., Muktiarni, M., Fitria, D., Husaeni, A. L., Hufad, A., Sunardi, S., Bayu, A., & Nandiyanto, D. (2022). SUSTAINABLE DEVELOPMENT GOALS (SDGS) IN SCIENCE EDUCATION: DEFINITION, LITERATURE REVIEW, AND BIBLIOMETRIC ANALYSIS. In Journal of Engineering Science and Technology Special Issue on ICMScE2022.

Maulina, N., & Atika, D. (2021). Novaria Maulina dan Atika MetaCommunication: Journal of Communication Studies KOMUNIKASI LINGKUNGAN MELALUI MAHARAGU SUNGAI DALAM MENINGKATKAN PARTISIPASI MASYARAKAT PADA PROGRAM REVITALISASI SUNGAI KOTA BANJARMASIN.

Meilina, E. A. (2024, October 10). Green Campus: Membangun Kampus Berkelanjutan untuk Masa Depan.

GreencampusTelkomUniversity. https://greencampus.telkomuniversity.ac.id/green-campus-adalah/

Mohd Isa, H., Singh Sedhu, D., Suzila Lop, N., Rashid, K., Mohd Nor, O., & Iffahd, M. (2021). STRATEGIES, CHALLENGES AND SOLUTIONS TOWARDS THE IMPLEMENTATION OF GREEN CAMPUS IN UiTM PERAK. In Journal of the Malaysian Institute of Planners (Vol. 19).

Morissan. (2019). Riset Kualitatif. Prenada Media Group.

Nasution, A. F. (2023). METODE PENELITIAN KUALITATIF.

Oepen, M. , H. W. (2000). Communicating the Environment: Environmental Communication for Sustainable Development. Austria: Peter Lang.

Pahleviannur, M. R., Grave, A., De, Saputra, D. N., Mardianto, D., Sinthania, N. D., Hafrida, L., Bano, V. O., Susanto, E. E., Mahardhani, A. J., Amruddin, Alam, M. D. S., Lisya, M., & Ahyar, D. B. (2022). Metodologi Penelitian Kualitatif.

Pezullo & Cox. (2018). Environmental Communication and the Public Sphere 2.

Rajul, A. (2023, October 24). Refleksi 43 Tahun Walhi Jabar, Jawa Barat Dikepung Kerusakan Lingkungan. BandungBergerak. https://bandungbergerak.id/article/detail/158969/refleksi-43-tahun-walhi-jabar-jawa-barat-dikepung-kerusakan-lingkungan

Ridha, M. (2024, February 21). Telkom University Raih Peringkat 1 Green Campus Swasta, Tawarkan Fasilitas Lengkap dan Lingkungan Belajar yang Nyaman . TelkomUniversity. https://telkomuniversity.ac.id/en/telkom-university-raih-peringkat-1-green-campus-swasta-tawarkan-fasilitas-lengkap-dan-lingkungan-belajar-yang-nyaman/

Sabila F, & Dirgantara, P. (2024). Strategi Komunikasi Lingkungan Pandawara Group Dalam Menyebarkan Kesadaran Ekologis di Kota Bandung. In Jurnal Communicology (Vol. 12, Issue 1). http://journal.unj.ac.id/

Shahreza, M., Sarwoprasodjo, S., Susilo Arifin, H., Retno Hapsari, D., Pascasarjana IPB, S., & Ekologi Manusia, F. (2020). KOMUNIKASI LINGKUNGAN PENGELOLAAN SAMPAH PADA BANK SAMPAH DI TANGERANG SELATAN ENVIRONMENTAL COMMUNICATIONS WASTE MANAGEMENT AT THE WASTE BANK IN SOUTH TANGERANG. Jurnal Penelitian Komunikasi, 23(2), 113–128. https://doi.org/10.20422/jpk.v23i2.721

Sipayung Ronald Sofyan G.S. (2023, September 14). Peningkatan Polusi Udara di Indonesia: Perspektif Ekonomi Berdasarkan Teori Freakonomics Read more: https://setkab.go.id/peningkatan-polusi-udara-di-indonesia-perspektif-ekonomi-berdasarkan-teori-freakonomics/. SekretariatKabinetRepublikIndonesia. https://setkab.go.id/peningkatan-polusi-udara-di-indonesia-perspektif-ekonomi-berdasarkan-teori-freakonomics/#:~:text=Polusi%20Udara%20di%20Indonesia%3A%20Sebuah%20Gambaran%20Umum&text=Selain%20itu%2C%20berdasarkan%20laporan%20terbaru,3%20%CE%BCg%20per%20meter%20kubik

Telkom University Green Campus. (2024).

Tel-U Green. (2024).

The united nations. (2024). Susteinable Development Goals. https://www.un.org/sustainabledevelopment/news/communications-material/

Tiyarattanachai, R., & Hollmann, N. M. (2016). Green Campus initiative and its impacts on quality of life of stakeholders in Green and Non-Green Campus universities. SpringerPlus, 5(1), 1–17. https://doi.org/10.1186/s40064-016-1697-4

UI Green Metric. (2024). UI Green Metric. https://greenmetric.ui.ac.id/

UNICEF. (2024, June 19). Air pollution accounted for 8.1 million deaths globally in 2021, becoming the second leading risk factor for death, including for children under five years. UNICEF. https://www.unicef.org/rosa/press-releases/air-pollution-accounted-81-million-deaths-globally-2021-becoming-second-leading-risk

Wahyudin. (2017). strategi komunikasi lingkungan.

Wahyudin, U. I. B. dan D. A. (2024). DINAMIKA KOMUNIKASI LINGKUNGAN konsep, Strategi, dan Aplikasi. Kencana.

Wamad, S. (2022, September 17). Membedah Memburuknya Kualitas Udara di Kota Bandung. Detikjabar. https://www.detik.com/jabar/berita/d-6296672/membedah-memburuknya-kualitas-udara-di-kota-bandung