JURNAL ILMIAH MANAJEMEN BISNIS DAN INOVASI
UNIVERSITAS SAM RATULANGI (JMBI UNSRAT)

IMPLEMENTING COST-EFFICIENT AND SUSTAINABLE GREEN INNOVATIONS FOR ENHANCING WASTE MANAGEMENT PRACTICES THROUGH CONSTRUCTIVE IDEAS

Gesti Memarista, Carissa Angel Martinus, Devano Immanuel Richard Dillon, Atirikata Rama Engelbert Poana, Albert Arkad
Universitas Katolik Widya Mandala Surabaya

A R T I C L E I N F O

Keywords: *Cost-Efficient; Green Waste Management; Student Creativity Program (PKM); Sustainability Development Goals*

Kata Kunci: Penghematan Biaya*;* Pengelolaan Sampah Hijau*;* Program Kreativitas Mahasiswa (PKM)*; Sustainability Development Goals*

Corresponding author:

Gesti Memarista
gestimema@ukwms.ac.id

Abstract. *Green waste management innovation is intimately linked to the Sustainable Development Goals (SDGs), particularly SDGs 12 (Responsible Consumption and Production) and 13 (Climate Action). Implementing cost-efficient green solutions can greatly improve waste management techniques. Businesses can save money on raw materials by reusing them. Products that are easy to repair and update require fewer replacements. Recycled materials can be sold to generate additional revenue. Related to this matter, students from the Faculty of Business at Widya Mandala Catholic University in Surabaya got a PKM grant for producing a video containing constructive ideas. The constructive idea video, titled Sorting Waste as One Step to Realizing a Healthy Environment, aims to raise awareness among Indonesians about the importance of waste sorting, encourage people to sort waste at home, and reduce the amount of waste disposed of at the Final Disposal Site (TPA). Waste sorting is the key to achieving sustainable waste management. Sorting garbage allows it to be treated more easily and efficiently, reducing environmental pollution, and improving its economic worth. Furthermore, this constructive idea video can create awareness of the Indonesian people who still have an apathetic attitude about the garbage problem around them by teaching them about the varieties of waste and waste sorting for environmental sustainability in the future.*

Abstrak. Inovasi pengelolaan sampah hijau terkait erat dengan *Sustainable Development Goals* (SDGs), khususnya SDGs 12 (Konsumsi dan Produksi yang Bertanggung Jawab) dan 13 (Penanganan Perubahan Iklim). Penerapan solusi hijau yang hemat biaya dapat meningkatkan teknik pengelolaan sampah secara signifikan. Suatu bisnis dapat menghemat biaya bahan baku dengan menggunakannya kembali. Produk yang mudah diperbaiki dan diperbarui membutuhkan lebih sedikit penggantian. Bahan daur ulang dapat dijual untuk menghasilkan pendapatan tambahan. Terkait hal ini, mahasiswa Fakultas Bisnis Universitas Katolik Widya Mandala Surabaya mendapatkan hibah Program Kreativitas Mahasiswa Video Gagasan Konstruktif (PKM VGK). Video Gagasan Konstruktif ini berjudul Memilah Sampah Sebagai Satu Langkah Mewujudkan Lingkungan Sehat ini supaya kesadaran masyarakat Indonesia meningkat terkait pentingnya pemilahan sampah, mendorong masyarakat menggolongkan sampah di rumah, serta memperkecil jumlah sampah yang akan dibuang di Tempat Pembuangan Akhir (TPA). Pemilahan sampah akan menjadi kunci untuk mencapai pengelolaan sampah yang berkelanjutan. Pemilahan sampah memungkinkan sampah untuk diolah dengan lebih mudah dan efisien, mengurangi pencemaran lingkungan, dan meningkatkan nilai ekonomisnya. Lebih jauh lagi, Video Gagasan Konstruktif ini dapat menumbuhkan kesadaran bagi masyarakat Indonesia yang masih memiliki sikap apatis terhadap permasalahan sampah di sekelilingnya dengan mengajarkan setiap individu mengenai berbagai jenis sampah dan pemilahan sampah demi keberlanjutan lingkungan di masa mendatang.

INTRODUCTION

The current generation has very creative and constructive ideas in social media and digital technology. The Indonesian Government held the *Program Kreativitas Mahasiswa* (PKM) (Fadhilah et al., 2022; Suciati, 2018). Especially, PKM *Video Gagasan Konstruktif* (VGK) will accommodate the interest of the current generation in uploading content on social media and accommodate it in the corridors of creativity, scientificity, and usefulness (Fadhilah et al., 2022; Risanti et al., 2023). PKM-VGK emphasizes ideas that are constructive to solve problems that are communicated in the form of video content on social media. Ideas that are expected to be able to solve current problems that occur in society related to the issue of protecting the Indonesian nation and the issue of sustainable development goals (SDGs). The construction of these ideas is then communicated creatively in the form of videos uploaded on YouTube. Related to the *Merdeka Belajar Kampus Merdeka* (MBKM) program from the Ministry of Education, Culture, Research and Technology, students who participate in PKM-VGK activities can claim credit equivalency according to the stages that have been completed (Sukino et al., 2024). PKM-VGK is an activity that can support the achievement of the Main Performance Indicators (IKU) of higher education (Direktorat-Belmawa, 2017).

PKM-VGK aims to motivate student participation in managing imagination, perception, and reasoning. It is an effort to provide constructive solutions to current problems that occur in society and are related to issues of concern to the Indonesian nation or the achievement of SDG goals in Indonesia from student contribution (Sukino et al., 2024). Students will be agents as young people to join the environmentally sustainable (Schönherr & Pikkemaat, 2024). PKM-VGK starts from a constructive idea and then is realized in creative and communicative video content on YouTube by the students that is lead by the lecturer. The Directorate General of Higher Education also launched PKM-VGK in 2021, which is managed by the Directorate of Learning and Student Affairs (Belmawa) (Direktorat-Belmawa, 2017).

The Faculty of Business, Widya Mandala Catholic University, Surabaya PKM team has the opportunity to obtain the PKM VGK grant by making a video. This team consists of four students and one lecturer. This team joins the PKM VGK since there are several reasons. Indonesia is one of the countries in the world that is striving to increase sustainable development. SDGs or Sustainable Development Goals initiated by the UN are a universal call that seeks to end the threat of poverty, protect the planet, also ensure that everyone can enjoy life in peace and prosperity. There are 17 universal goals for 2030, some of which are related to the community environment, namely a healthy and prosperous life, clean water and proper sanitation, marine ecosystems, and finally terrestrial ecosystems.

The amount of waste in Indonesia in 2021 was 23,353,561.96 tons and is even estimated to increase every year (SIPSN, 2021). If the amount of waste continues to increase without proper efforts to prevent it, the impact on the surrounding environment will be very large. Common impacts that often arise are flooding and poor public health. According to health experts, the accumulation of garbage can cause diseases such as digestive tract infections, typhus, and others.

The impacts that can be caused by garbage are very significant and the community needs to be sensitive to deal with this issue. The community often underestimates the problem of garbage. It is not uncommon to find people burning garbage to destroy it. If there is plastic waste that is burned, it can produce carbon monoxide (CO) which interferes with the function of red blood cells and damages the immune system if inhaled by humans (Jayakumar et al., 2024; biggi et al., 2024). From here it can be seen that many people do not know the right way to reduce garbage.

One solution is to sort waste, which is the activity of grouping and separating waste according to the type and nature of the waste. A waste management expert, waste sorting is the

key to realizing sustainable waste management. By sorting, waste can be processed more easily and efficiently, reducing environmental pollution and increasing the economic value of waste (Sorooshian et al., 2024). There needs to be a joint effort from the government, the community, and various related parties to carry out waste sorting activities. Therefore, the team wants to help by creating a PKM-VGK entitled Sorting Waste: One Step to Realizing a Healthy Environment to increase public awareness and participation and motivate the community to care about the environment and their health. To raise awareness among Indonesian people, especially those who are still apathetic towards the waste problem that occurs around them, by educating them about the types of waste and waste sorting for the sake of the sustainability of the environment in the future (Raza et al., 2024). The campaign of green waste management through PKM VGK will relate to the Sustainable Development Goals (SDGs). It consists of responsible consumption and production and climate action. Implementing cost-effective green solutions can significantly enhance waste management practices. Businesses can save money by reusing raw materials, so the business owner can increase the financial satisfaction (Memarista et al., 2022). Products that are simple to maintain and upgrade need fewer replacements.

RESEARCH METHOD

The research method will be explained in detail in the production of this constructive idea video with a qualitative method. In the production of this video will take 2 months to 3 months, starting with the preparation of materials, scripts, shooting and video, and animation editing. In addition, there are several things that the team needs to prepare to support the smooth running of the shooting process, including hardware such as a camera, microphone, drone, stabilizer, and lighting, for the software using Sony Vegas Pro.

In the image production stage, the team uses our expertise in taking pictures, which is included in the art of visualization and editing, the techniques used to take pictures are camera level and shot size, and camera movement cheat sheet. Also, for taking footage, audio will be live using a microphone that is directly connected to the camera, while cinematic footage will use voice-over, which is done after the tapping process is complete. Then for the shooting of the explanation process regarding waste sorting, it will be done indoors using a green screen, which makes it easier for the editor to edit the process, so that animations can be added, animations about waste sorting in the video. Editing will be done neatly.

This video production starts with researching to find a landfill near Surabaya. Details of the location selection for shooting according to the aspects needed, this project takes pictures with the Benowo Landfill as the background. Then, the team also saw what simple things the community can do at home. Figure 1 shows the pile of rubbish in the Benowo Garbage Disposal Site.

Figure 1. Pile of Rubbish in the Benowo Garbage Disposal Site

After knowing the location for making the video and how to sort waste from home, the team continues to prepare the material, script, shooting, and video. In addition, there are several things that the team needs to prepare to support the smooth running of the shooting process, including hardware such as microphones, drones, and stabilizers. Next, the team went to the shooting location or landfill in the Benowo area and do recording together with the videographer.

The next step, the team submited the video to the editor for the editing process. At the same time for the video finishing process. Post-production of this video, later it will be published through social media such as Instagram in the form of Instagram TV, and YouTube, the completed video must have a good concept and design, to attract interest from various groups, from old to young, to watch the video. For the video screening, the team used 2 methods, the first is a thriller video, or teaser, such as a short video, and the second is a full video, or a complete video screening, which shows the entire scene, without any cutting, with a duration of 1 minute for a thriller video and 8-10 minutes for a full video

RESULT AND DISCUSSION

The mountains of garbage in Indonesia have been seen as quite worrying and have often been in the media spotlight. The piles of garbage produced by the community certainly harm the survival of the community. And of course, the community and the government want to solve this problem. One easy way is to sort the garbage to create a healthy environment. By sorting the garbage, organic waste can be processed into compost and inorganic waste can be recycled.

Waste sorting is separating organic and non-organic waste groups and then placing them in different containers (Biggi et al., 2024). Organic waste is a biodegradable material that comes from plants and animals. It decomposes naturally and can be composted to create nutrient-rich soil, such as food scraps, yard waste, food-soiled paper products, manure, wood, etc. Non-organic waste includes materials that are not biodegradable or decompose very slowly. This type of waste often includes synthetic materials and can be recycled or disposed of in landfills or incinerators, such as plastic, metals, glass, textiles, ceramics, and composite materials. This sorting is also important to find out which waste can still be used or utilized. This activity should be carried out from the source such as households, schools, industries, public facilities, and others. This activity seems quite easy to do. However, has this activity been done often? Of course, it is very rare. In Indonesia itself, there are still very few trash bins that support this activity. As well as the lack of knowledge about waste sorting in the community from various groups. By creating PKM-VGK with the title Sorting Waste: One Step to Realizing a Healthy Environment, the team hopes to increase the awareness of the Indonesian people about the importance of sorting waste and encourage people to sort waste from home, as well as reduce the amount of waste disposed of at the Final Disposal Site (TPA).

The team created an educational video on waste sorting targeted at the younger generation (15-30 years old). This video uses a light, easy-to-understand narrative, and is occasionally interspersed with contemporary language. The team also added animation, chose appropriate music, and sound effects, and did neat editing. That way, the resulting video can be more effective in conveying messages to the public. The activities of the PKM-VGK team are shown in Table 2. It displays the Gantt Chart that represents the PKM-VGK project schedule during 4 months. From brainstorming product ideas to product VGK marketing.

Table 2. The Activities of the PKM-VGK Team

No.	Activities	Month			
		1	2	3	4
1	Literature study				
2	Proposal making				
3	Video design				
4	Video recording process				
5	Video editing				
6	Video finishing				

The constructive ideas video has the following story synopsis. First section, Indonesia is a country with a very large area and hundreds of millions of people. With the 4th largest population in the world, this country certainly cannot be separated from the issue of waste. Although this sounds "trivial", in fact the issue of waste is like a scourge for the natural conditions of Indonesia. It is not uncommon for areas in Indonesia to experience natural disasters such as floods and landslides. In addition, waste can also disrupt public health. Then, what will happen if society continues to turn a blind eye to the waste issue that haunts Indonesia? Second section, one solution to overcome this issue is to sort waste. If people start to throw away waste by separating organic, inorganic, B3, and residual waste, then environmental pollution will decrease and their health will be maintained. The waste sorting method applied to the waste disposal process can also make waste processable so that it can help increase community income. Through waste sorting, society can eradicate various issues caused by waste. The following figure 2 shows the recording result of PKM VGK. There is a story script contained in VGK with several broadcast scenes in the Indonesian language (Memilah Sampah Satu Langkah Wujudkan Lingkungan Sehat).

Figure 2. The Barcode of PKM VGK Result: A Step for Earth

In the series of the PKM video making process, the team has done all the required outputs. Among them, is the final video that was published on the YouTube account namely a.step4earth with the link https://bit.ly/Youtube_VGK_ImplementingCostEfficientandWasteManagement, the progress report in Simbelmawa, and Instagram accounts (@a.step4earth). Booth's Instagram and

YouTube account namely @a.step4earth means one step for the earth. The logo is shown in Figure 3. Further, the title of our PKM-VGK video is Sorting Waste: One Step to Create a Healthy Environment. The team hopes that with the account name summarized in a contemporary style, it can be more attractive to Gen Z or today's teenagers who are mostly active on social media, especially Instagram.

Figure 3. The Logo of a.step4earth

Those are the results the team has achieved. While there are other results are the goals of our program, namely, to increase awareness of the Indonesian people, especially for people who express apathy towards the waste problem that occurs by educating them about the types of waste and waste sorting. Through this constructive idea video, many benefits are felt from various aspects such as social, economic, and education.

The first aspect is social. This video can help the public to increase their awareness by understanding the importance of sorting waste and types of waste. This can encourage them not to be apathetic towards the condition of the surrounding environment. It also builds a culture of caring for the environment and social value (Jayakumar et al., 2024). Through this educational video, the public is expected to be more motivated to participate in environmental conservation efforts.

The second aspect is economic. If in the future there is an industry engaged in waste management, it can create new jobs. This can certainly help increase income and eradicate unemployment. Some waste that has been sorted can be processed into new items so that it has economic value. In other words, it increases the economic value of waste and helps to develop businesses (Jayakumar et al., 2024). Small and medium enterprises that are engaged in recycling waste management can be more advanced if the community is accustomed to sorting waste. If people start to sort their waste, they will get a cleaner, healthier environment, and fresh air. It can help maintain the availability of sustainable natural resources by not polluting the environment. In other words, the quality of life of the community can be better because the environment is healthier and accompanied by an increase in the economy in Indonesia. This can help improve the Indonesian economy with the tourism industry (Raza et al., 2024).

The third aspect is education. This video will increase knowledge of waste. Educational videos about waste sorting can be used as learning media in schools, so they help students understand the importance of protecting the environment, what types of waste are, and how to process them. It helps students' perception of environmental sustainability (Haque et al., 2023). In addition, it can also foster a caring character for the environment in each young people (Gurova, 2024; Schönherr & Pikkemaat, 2024). Then, increasing skills and creativity. In the video about waste sorting, students are taught how to process waste into useful items. This can help them develop useful life skills (Chapungu & Nhamo, 2024).

From three aspects as the benefits of waste management. The most important is cost efficiency benefit. Since it covers all aspects of the relationship between waste management and sustainability development goals. Waste sorting is an important strategy that can improve

both environmental sustainability and economic efficiency (Sorooshian et al., 2024). Communities and organizations can limit the amount of garbage sent to landfills and incinerators by appropriately categorizing it into recyclables, compostables, and non-recyclables. This technique not only contributes to a cleaner environment by reducing pollution and conserving natural resources, but it also provides significant financial savings.

First, garbage sorting lowers disposal expenses, and the sharing economy increasing (Aref, 2024). Landfills and incinerator facilities frequently charge fees based on the weight or amount of waste. By diverting recyclable and compostable products from the trash stream, companies can reduce the amount of garbage that requires costly disposal. For example, recyclable materials such as paper, plastics, and metals can be sold to recycling facilities, thus generating cash or offsetting disposal expenses. Compostable materials, on the other hand, can be converted into useful compost for agriculture or landscaping, decreasing the need for expensive waste management services.

Second, good trash sorting promotes the creation of a circular economy. When materials are properly sorted and recycled, they can be reprocessed and reused, reducing the demand for fresh materials. This decreases the environmental effect of raw material extraction and processing, resulting in cheaper prices for producers and consumers (Jayakumar et al., 2024). For example, recycling metal saves up to 95% of the energy required to make new aluminum from raw ore, demonstrating recycling's energy and cost-effectiveness in comparison to raw material extraction.

In addition, introducing waste sorting programs helps raise community knowledge and responsibility for environmental sustainability. By educating consumers and companies on the benefits of garbage sorting, societies may encourage better waste management practices, resulting in long-term cost savings and a healthier environment. Overall, waste sorting is a practical technique that balances economic efficiency and environmental stewardship, demonstrating that sustainable activities may be financially beneficial.

CONCLUSION AND SUGGESTION

Effective waste sorting significantly enhances environmental sustainability by reducing landfill use, lowering pollution, and promoting recycling. Implementing organized waste sorting systems can also be cost-efficient, as it reduces the need for expensive waste disposal and treatment. By investing in education and infrastructure for proper waste sorting, communities can both preserve resources and minimize costs in the long run. To maximize cost efficiency in waste management, communities should focus on increasing public awareness through education campaigns and adopting effective sorting technologies. Partnering with local leaders and leveraging their influence can further drive engagement and compliance. Additionally, evaluating and optimizing waste sorting processes regularly will ensure ongoing efficiency and adaptability to emerging challenges.

Authorities, such as governments, non-profit organizations, and educational institutions can have the opportunity to use our videos, namely about waste sorting in the form of efforts to raise public awareness and demonstrate environmentally friendly healthy behavior. For example, conducting educational campaigns by playing videos on the media so that they are widely distributed, creating programs for the community to start sorting waste which can also be programmed in school environments, using social media to create emergency waste communities, and conducting inspections of individuals or businesses that do not comply with waste management regulations. By implementing waste sorting videos effectively, authorities can play an important role in raising public awareness of the importance of waste management and make something good in the tourism industry (Pongsakornrungsilp & Pongsakornrungsilp, 2023).

There is an opportunity to obtain copyright because this video includes educational content that has a lot of information and is useful for many parties. In addition, the video also contains creativity and originality in conveying messages about waste sorting. On the other hand, there are several things to consider in obtaining copyright, namely in the video there are several recordings taken from other trusted sources. However, the team has displayed a link to where the video came from to avoid copyright issues

To achieve the target of 100% of our program activities, the PKM video still needs to be researched and revised further to perfect the existing editing results. After the final video has been determined, the team will consult with the supervising lecturer. Then, the team uploaded it to YouTube and also the Instagram account (@ a.step4earth). The team tried to advertise the video to reach all groups, especially the young generation of Indonesia who actively use social media. Finally, the team will make a final report as a form of the implementation of a series of PKM-VGK entitled "Sorting Waste: One Step to Realizing a Healthy Environment".

Making this waste sorting video can be a powerful tool for educating and engaging audiences about the need for good waste management. However, there are several research limitations to consider when preparing and presenting this video. Understanding the unique requirements and behaviors of various audiences can be difficult because they vary in age, cultural background, and prior understanding of waste sorting. While the video may effectively transmit information, determining actual behavioral changes and ensuring that these changes lead to better waste-sorting processes can be difficult.

Furthermore, technical aspects like as video resolution, sound quality, and editing might have an impact on the video's effectiveness. Poor technical quality can take away from the message and decrease audience interest. Maintaining high manufacturing standards necessitates access to proper equipment and experience, which may not always be available. Getting and keeping viewers' attention is a huge task. Even if the video contains engaging content, viewers may not fully engage or retain the information offered. Strategies to increase engagement, such as interactive components or direct calls to action, must be properly prepared and tested. Creating a high-quality video requires time, money, and experience.

Limited resources may limit the video's breadth, impacting its ability to cover all key areas of waste sorting in depth. Those constraints can have an impact on production quality, distribution, and promotional activities. Collecting and implementing audience input is critical to developing the video and ensuring its success. However, this procedure can be time-consuming and may not always provide practical information. Balancing feedback with production restrictions can be tough. Addressing these limits necessitates careful planning, continual examination, and flexibility. Recognizing these difficulties allows designers to better prepare for the complexities of creating an impactful garbage-sorting video.

Since there are some limitations of the research, here are some research suggestions for the academic and practical considerations that should be taken into account to ensure the research is comprehensive and actionable. For academic research, suggestions can consider the cost-benefit analysis of video interventions, the effectiveness of different video formats, longitudinal impact studies, quantitative analysis of production costs versus savings, and behavioral and psychological factors. Meanwhile, for practical research suggestions can consider the pilot program evaluation for schools, businesses, and municipalities. Further, the practices can consider more stakeholder engagement, integration with existing programs, optimization of distribution channels, and user experience and feedback. By pursuing these research suggestions, both academic and practical insights can be gained, leading to more effective and cost-efficient waste management video initiatives.

REFERENCES

Aref, M. (2024). Sharing economy from the sustainable development goals perspective: a path to global prosperity. *Journal of Internet and Digital Economics*. https://doi.org/10.1108/jide-02-2024-0007

Biggi, G., Principato, L., & Castellacci, F. (2024). Food waste reduction, corporate responsibility and national policies: evidence from Europe. *British Food Journal*, *126*(13), 470–485. https://doi.org/10.1108/BFJ-11-2023-0982

Chapungu, L., & Nhamo, G. (2024). Academia's engagement with Sustainable Development Goals: status quo and barriers at Great Zimbabwe University. *International Journal of Sustainability in Higher Education*, *25*(9), 234–254. https://doi.org/10.1108/IJSHE-07-2023-0329

Direktorat-Belmawa. (2017). *Pedoman Program Kreativitas Mahasiswa 2017*.

Fadhilah, N., Sanjoyo, B. A., Ariastita, P. G., Aparamarta, W. H., Abadi, I., & Risanti, D. D. (2022). Peningkatan Kualitas PKM (Program Kreativitas Mahasiswa) di Perguruan Tinggi Surabaya. *Sewagati*, *6*(5), 646–654. https://doi.org/10.12962/j26139960.v6i5.422

Gurova, O. (2024). Practice theory approach to Gen Z's sustainable clothing consumption in Finland. *Young Consumers*, *25*(3), 289–307. https://doi.org/10.1108/YC-06-2023-1765

Haque, Md. N., Abtahee, M., Islam, A. A., & Sadiq, Md. A. (2023). Students' perception of environmental sustainability (ES) exercises at higher education institutions (HEIs) in Bangladesh. *Frontiers in Engineering and Built Environment*, *3*(3), 167–179. https://doi.org/10.1108/febe-07-2022-0030

Jayakumar, M. D., Ramasundaram, A., & Vanathayan, A. (2024). Plastic warriors: a study on self-help group's contribution to economic, social value creation and sustainable development goals (SDGs) in Tamil Nadu, India. *Vilakshan - XIMB Journal of Management*, *21*(1), 79–90. https://doi.org/10.1108/xjm-01-2023-0016

Kaihatu, T. S. (2023). The Influence of Tam Factors on The Interest of Pay Later Users. *JMBI UNSRAT (Jurnal Ilmiah Manajemen Bisnis Dan Inovasi Universitas Sam Ratulangi).*, *10*(1), 162–173.https://doi.org/10.35794/jmbi.v10i1.47351

Lemy, D. M., Bernarto, I., & Tulung, J.E. (2013). Pengaruh Bauran Komunikasi Pemasaran Jasa Terhadap Proses Pengambilan Keputusan Mahasiswa Memilih Perguruan Tinggi Swasta di Sulawesi Utara. *Jurnal Manajemen: Derema*

Memarista, G., Kristyanto, V. S., & Kristina, N. (2022). What drives Indonesian financial satisfaction in the pandemic? *Jurnal Manajemen Maranatha*, *21*(2), 155–164. https://doi.org/http://dx.doi.org/10.28932/jmm.v21i2.4645

Pongsakornrungsilp, P., & Pongsakornrungsilp, S. (2023). Mindful tourism: nothing left behind–creating a circular economy society for the tourism industry of Krabi, Thailand. *Journal of Tourism Futures*, *9*(3), 366–380. https://doi.org/10.1108/JTF-01-2021-0001

Raza, S. A., Khan, K. A., & Qamar, B. (2024). Understanding the influence of environmental triggers on tourists' pro-environmental behaviors in the Pakistan's tourism industry. *Journal of Tourism Futures*, *10*(1), 38–67. https://doi.org/10.1108/JTF-12-2021-0269

Risanti, D. D., Rois, M. F., Fadhilah, N., Priambodo, T. G. S., Sanjoyo, B. A., Ariastita, P. G., Aparamarta, H. W., & Abadi, I. (2023). PKM (Program Kreativitas Mahasiswa) Sebagai Instrumen Peningkatan Budaya Keilmiahan dan Kemahasiswaan pada Perguruan Tinggi Surabaya. *Sewagati*, *7*(5), 810–820. https://doi.org/10.12962/j26139960.v7i5.655

Schönherr, S., & Pikkemaat, B. (2024). Young peoples' environmentally sustainable tourism attitude and responsible behavioral intention. *Tourism Review*, *79*(4), 939–952. https://doi.org/10.1108/TR-01-2023-0022

Sorooshian, S., Ahadi, N., & Zainul Abideen, A. (2024). Leading countries and research networks advancing clean production and environmental sustainability in Southeast Asia. In *International Journal of Development Issues* (Vol. 23, Issue 1, pp. 84–105). Emerald Publishing. https://doi.org/10.1108/IJDI-06-2023-0165

Suciati. (2018). Pengembangan Kreativitas Inovatif Melalui Pembelajaran Digital. *Jurnal Pendidikan*, *19*(2), 145–154. https://doi.org/10.33830/jp.v19i2.731.2018

Sukino, Jobih, Noor, R. R., Astuti, I., Fauzy, A., Gofar, N., Argo, B. D., Sanjoyo, B. A., Suherman, Ariastita, P. G., Chabib, L., Wikaningrum, T., Siregar, F. S., Permana, A. D., Rahman, F., Arfiah, F., Wiguna, A. T., Farihah, H. I., Nasrullah, H., … Ramadan, A. (2024). *Panduan Umum Program Kreativitas Mahasiswa 2024*.

Zhang, J., Quoquab, F., & Mohammad, J. (2024). Plastic and sustainability: a bibliometric analysis using VOSviewer and CiteSpace. In *Arab Gulf Journal of Scientific Research* (Vol. 42, Issue 1, pp. 44–67). Emerald Publishing. https://doi.org/10.1108/AGJSR-10-2022-0225