



Handicraft Business Opportunities Using Mineral Glass Water: an Innovative Student Enterprise Focused on Eco-Friendly Products in Selangor, Malaysia

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ABSTRACT

Used plastic cups are inorganic waste that is difficult to decompose and often discarded because they are considered useless. However, if managed properly, used plastic cups can be repurposed into various useful and aesthetically valuable craft products. Examples of crafts that can be made include fruit baskets, hijab hangers, decorative lamps, and flowers made from plastic cups. This recycling process not only helps reduce environmental pollution but also provides opportunities to create innovative and beneficial products. This activity is part of an international Community Service (PkM) program conducted by Universitas Muslim Indonesia (UMI) at Universiti Kebangsaan Malaysia (UKM). The program aims to provide participants at UKM with an understanding of the importance of entrepreneurship and creativity in managing plastic waste. Through this training, participants are expected to develop an entrepreneurial spirit, enhance their courage in facing challenges, and innovate to create solutions that are beneficial to both the environment and society

INTRODUCTION

The concept of being eco-friendly refers to a lifestyle that does not harm the environment and surrounding nature. This lifestyle has become increasingly important as awareness about protecting the Earth from damage grows each year. There are various ways to make sustainable changes and reduce the negative effects often caused by everyday activities. Steps toward living an eco-friendly life can start with small actions, such as reducing the use of single-use plastics, practicing waste recycling, saving energy, and more (Batubara et al., 2022). A significant amount of used plastic is discarded and left scattered in the environment, contributing to pollution and environmental damage. While plastic is technically a biodegradable material, it takes a very long time to break down in the soil, often taking centuries to decompose completely (Purwaningtyas et al., 2024). As a result, plastic waste accumulates in landfills and natural habitats, creating long-term environmental problems, (Puspitasari et al., 2023).

However, instead of being seen solely as waste, plastic can be transformed into a variety of useful and creative products. Thanks to its versatility in shape, color, and texture, plastic offers great potential for crafting. From decorative items to household objects and even fashion accessories, plastic waste can be turned into high-value products. These crafts not only help reduce waste but can also be sold, providing a way to turn discarded plastic into a profitable resource (Karim et al., 2022; Karmeli et al., 2020).

The process of recycling plastic into crafts is simple enough for people of all ages to take part in, from children to adults. This makes it an accessible and sustainable activity, encouraging creativity while also promoting environmental awareness. By reimagining plastic as a reusable material, we can reduce its harmful impact on the environment and embrace a more eco-friendly lifestyle, (Mahriadi et al., 2021) Used plastic cups are a prime example of inorganic waste that is difficult to decompose and is often discarded because they are considered useless. However, with proper management, these cups can be transformed into valuable and functional products. Plastic cups come in a variety of shapes, colors, sizes, and designs, making them versatile for crafting (Aswaya et al., 2023a).

Some examples of crafts made from plastic cups include fruit baskets, hijab hangers, decorative lamps, and even flowers made from plastic. The materials are easy to obtain, and the process of creating these crafts is simple, making them accessible to people of all ages. Recycling plastic cups not only helps reduce environmental pollution but also creates eco-friendly products that add beauty and function. For example, plastic flower crafts can enhance the aesthetic appeal of a room or table, (Aswaya et al., 2023a).

This activity was carried out with the goal of exploring the opportunities to turn waste into something valuable (Aswaya et al., 2023b). By reusing plastic cups in creative ways, we can contribute to reducing waste, protect the environment, and create products that have both aesthetic and practical value (Aminudin & Nurwati, 2019).

LITERATURE REVIEW

Malaysia has a long history of producing traditional handicrafts, which are an essential part of the cultural and economic heritage. These products range from textiles, pottery, and woodwork to more contemporary designs. In recent years, there has been a growing interest in integrating modern technology and sustainable practices into the handicraft sector, providing new opportunities for young entrepreneurs (Ali & Tan, 2020). According to a study by Zulkifli et al. (2019), Malaysia's handicraft sector is poised for growth, especially with the increasing global demand for unique, authentic, and eco-friendly products.

Mineral glass water, a byproduct of the process of refining mineral-rich glass, has garnered attention in recent years for its potential in various industries, including art and craftsmanship. Mineral glass, known for its durability and clarity, is often used in the production of high-quality glassware, jewelry, and decorative items. The use of mineral glass water, specifically as an innovative material for handicrafts, has the potential to reduce waste and promote eco-friendly practices in the manufacturing process (Wong & Tan, 2021). Studies suggest that incorporating such materials into handicraft products not only creates aesthetically appealing items but also supports sustainability by utilizing resources that would otherwise be discarded.

Eco-friendly businesses have become a global trend as consumers increasingly prioritize sustainability and ethical production processes. According to a report by the International Trade Centre (2022), businesses focused on environmentally sustainable practices are growing, especially in the context of the millennial and Gen Z consumer base. In Malaysia, the government's push for green entrepreneurship, coupled with rising environmental awareness, has fostered the growth of eco-friendly business models (Chua & Lee, 2020). The adoption of eco-friendly materials and methods is a central theme in the country's "Green Technology" initiative, which aims to promote sustainable practices across various industries, including handicrafts (Raja et al., 2021). Student-led enterprises have gained traction as incubators of innovative ideas, especially in developing nations like Malaysia. These businesses often combine youthful creativity, academic knowledge, and a strong sense of social responsibility. According to Hussain & Ibrahim (2022), student entrepreneurs are increasingly engaged in environmentally conscious enterprises, motivated by a desire to contribute to society and reduce their carbon footprint. The trend of student-run eco-friendly businesses is particularly visible in universities, where students are encouraged to engage in sustainability initiatives and entrepreneurship (Musa & Abu, 2020). Such initiatives not only provide students with practical business experience but also foster an entrepreneurial spirit that can lead to long-term societal impact.

While the handicraft sector in Malaysia is growing, challenges remain, particularly in terms of competition, raw material sourcing, and market accessibility. The use of non-traditional materials such as mineral glass water may provide a competitive edge, but it also comes with challenges in terms of material sourcing, production skills, and market education (Ismail & Noor, 2018). Nevertheless, there are substantial opportunities in aligning handicraft products

with eco-friendly principles, as consumers are increasingly looking for products that reflect their values, including sustainability and craftsmanship (Yusof & Ahmad, 2019). Furthermore, the rise of e-commerce platforms has created new avenues for handicraft businesses to reach global audiences, enhancing their growth potential.

Research has shown that consumer preferences are shifting towards more sustainable products. In Malaysia, eco-conscious consumers are willing to pay a premium for products that are environmentally friendly, locally sourced, and ethically produced. Studies by Su & Tan (2021) indicate that Malaysian consumers are becoming more aware of the environmental impact of their purchasing decisions, thus favoring businesses that align with these values. Handicraft businesses that incorporate sustainable materials like mineral glass water can tap into this growing market segment, meeting both consumer demand and contributing to environmental conservation

METHODOLOGY

The implementation of this community service program involved several stages. The first step was conducting a survey, followed by preparing the materials and key points to be shared during the actual community service activity. The next step was a socialization phase before the program, which included a visit to meet with the head of the foundation to explain the objectives and goals of the community service project (Prihatin & Syahnur, 2021).

The service team then conducted a training session on utilizing mineral water bottle waste to create beautiful and functional serving trays at the University Kebangsaan Malaysia (UKM), Selangor, Malaysia. The training took place from September 24-26, 2024. The purpose of this training was to provide additional knowledge to students about how to manage plastic waste and turn it into eco-friendly products using appropriate technology.

The community service activity was implemented using a combination of methods, including lectures, tutorials, and discussions. This program was part of an ongoing international Community Service (PkM) collaboration between Universitas Muslim Indonesia (UMI) and Universiti Kebangsaan Malaysia (UKM). Prior to the activity, there had already been a partnership between the two universities to ensure the successful execution of this program. The first stage involved a lecture, where participants were introduced to the importance of financial management in starting and running a business. During the lecture, participants were motivated to understand the significance of managing their business finances effectively. The session also covered an overview of financial management and marketing strategies for small businesses, particularly in the handicraft sector. Participants were encouraged to share the challenges they had faced regarding business finances and product marketing.

The second stage involved a tutorial, where participants were provided with practical training on various aspects of business management. This included topics such as cost and capital estimation, setting product prices, sales record-keeping, marketing techniques, and product design. The tutorial format included both theoretical explanations and hands-on exercises to help participants apply the concepts they had learned.

Lastly, the discussion method allowed participants to engage in an interactive dialogue about the business and marketing challenges they had encountered in their own ventures. This session provided a valuable opportunity for participants to ask questions, share experiences, and receive advice on how to improve their entrepreneurial efforts.

RESULT AND DISCUSSION

Community Service Training on Plastic Waste Utilization

As part of the research findings, the community service activity provided a training session on the creative use of plastic waste to produce handicrafts. The training was attended by Indonesian students who are currently studying at Universiti Kebangsaan Malaysia (UKM) in Selangor, Malaysia. This partnership program aimed at community engagement focused on fostering creativity in utilizing plastic waste for handicraft production. The training was held once, at the Tun Seri Lanang Library at UKM, where participants learned practical skills for transforming plastic waste into valuable, eco-friendly crafts.



Figure 1. The Service Team and Participants are doing the Practice

Participation and Enthusiasm in the Plastic Waste Craft Training

Throughout the community service activity focused on the creative repurposing of plastic waste into handicrafts, Indonesian students who participated in the training displayed a high level of enthusiasm and eagerness. This was clearly visible through their active participation and the large number of Indonesian and international students who attended the session. The energy and excitement of the participants were further evident from the photographs taken during the training, which captured the students' involvement and engagement in the various craft-making activities.

While the final products created by the students – handicrafts made from recycled plastic waste – were still a work in progress and did not yet meet the highest level of perfection, the joy and satisfaction of the participants were unmistakable. The students, both Indonesian and international, expressed genuine happiness throughout the process, demonstrating their commitment to learning and completing the training. The fact that they stayed engaged and enthusiastic until the end of the program highlighted their interest in the activity and the value they placed on the skills they were acquiring.

The training not only allowed the students to explore their creativity but also equipped them with new knowledge and practical skills in transforming waste materials, particularly plastic, into valuable, eco-friendly products. This experience offered them a unique opportunity to gain hands-on experience in the growing field of sustainable product design and waste management. Although the craft products made during the training were not yet fully refined, the students left the session with a sense of accomplishment, knowing they had gained useful skills that could be applied to future creative projects or even entrepreneurial ventures.

By the end of the training, the participants had a better understanding of how plastic waste can be creatively utilized to create functional and decorative items, thus contributing to environmental sustainability. The knowledge and skills gained in this training will likely inspire them to continue exploring the potential of recycling and sustainability in their personal and professional lives.

Closing Ceremony and Future Collaboration in the International Community Partnership Program (PkM)

At the conclusion of the International Community Partnership Program (PkM), our team, together with the Indonesian students who participated in the training, gathered for a memorable group photo to mark the successful completion of the event. This photo session was a symbolic moment, bringing together not only the Indonesian students but also international participants, including students from Korea, reflecting the collaborative and multicultural nature of the program. It was an opportunity to celebrate the collective enthusiasm and the valuable exchange of knowledge that took place during the event.

The closing ceremony, while a moment of reflection on the success of the program, also served as a stepping stone for future collaboration. The positive outcomes of this international partnership have laid the foundation for an even more intensive collaboration between Universitas Muslim Indonesia (UMI) and Universiti Kebangsaan Malaysia (UKM). There are plans for continued engagement, with the involvement of a larger group of students and faculty members from both universities. This will help deepen the partnership and create a more robust platform for knowledge exchange, especially in the areas of sustainability, entrepreneurship, and community empowerment.

Looking ahead, we envision a series of follow-up activities where university leaders and a broader group of students will work together to develop further initiatives under this international partnership. This will involve not only expanding the scope of the community service programs but also exploring new areas for academic and research collaboration. By fostering a more intensive and sustained collaboration between UMI and UKM, we aim to build stronger ties and create long-term impacts for both the institutions and the communities they serve. This growing partnership will be a key step toward achieving shared goals in education, environmental sustainability, and global community development.



Figure 2. Photo with Participants

CONCLUSION AND RECOMMENDATION

Monitoring and Evaluation of the Training Outcomes

After conducting monitoring and evaluation, it was evident that the outcomes of the training had a significant positive impact on the Indonesian students at Universiti Kebangsaan Malaysia (UKM). The students' craft creations showed noticeable improvement and became more refined and satisfying as a result of their participation in the training program. The evaluation revealed that the participants not only learned how to creatively transform plastic waste into valuable handicrafts but also gained a deeper understanding of the importance of such activities for both environmental sustainability and personal development.

Following the training, the participants demonstrated a much stronger grasp of how to develop various types of handicrafts using different raw materials, including plastic waste. This newfound skill set has empowered them to explore and create diverse models of handicrafts, expanding their creative potential. Moreover, the participants now recognize the potential of such skills to contribute positively to their communities and personal lives.

The overarching goal of this training is to equip the students with entrepreneurial skills that could help them improve their livelihoods. With the knowledge and skills they gained, it is hoped that they will be able to contribute to their family's economic well-being by creating and selling their own handicrafts. This not only supports their personal growth but also has the potential to foster economic independence and create opportunities for small-scale businesses within their communities.

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We are especially grateful to the Dean of the Faculty of Economics and Business (FEB) at UMI for their leadership and support, which played a key role in the execution of this international community service initiative. Their vision and encouragement have been instrumental in ensuring the program's success. We also wish to express our sincere appreciation to the Head of the Department of Economics and Development Studies at UMI for their dedicated guidance and for facilitating the active participation of students in this project. Their commitment to academic excellence and community involvement has been vital in making this program impactful.

Additionally, we are profoundly grateful for the financial support provided by both UMI and UKM, which made this program possible. The funding allowed us to create meaningful opportunities for students and participants, empowering them to develop new skills, knowledge, and entrepreneurial capabilities. We are excited to continue our collaboration and look forward to further strengthening the ties between our institutions. This partnership has opened doors for greater cooperation and mutual growth in education, sustainability, and community empowerment. Once again, we express our deepest thanks to Universitas Muslim Indonesia, Universiti Kebangsaan Malaysia, the Dean of FEB, the Head of the Department of Economics and Development Studies, and all others who have contributed to the success of this international community service program

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