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Utilization of Eco-print Techniques as an Environmentally Friendly Fashion Business Opportunity

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Abstract. The textile industry is one of the largest contributors to global waste, with a significant portion of this waste consisting of liquid byproducts from synthetic dyes that contain harmful chemicals. A sustainable alternative to reduce this type of waste is to replace synthetic dyes with natural dyes derived from plants. One eco-friendly dyeing method is the eco-print technique, which transfers colors and patterns directly onto fabric through contact with plant materials. This technique utilizes plant parts rich in color pigments, such as leaves, flowers, and bark. Eco-printed products have both aesthetic and market value, offering potential business opportunities. This article is based on a literature review of national and international journal sources and aims to highlight the potential of eco-printing as a profitable venture within the fashion industry.

Keywords: Textile waste, synthetic dyes, natural dyes, eco-print, business opportunities.

INTRODUCTION

The textile industry is a major contributor to global waste, including significant amounts of liquid waste from residual synthetic dyes used in fabric dyeing processes. This liquid waste often contains harmful chemicals that pose environmental risks. Originally, textiles were colored using natural dyes. However, with technological advancements, synthetic dyes were developed. Synthetic dyes offer benefits such as a broad range of colors, consistent availability, ease of access, practicality, cost-effectiveness, and stronger color retention. They produce vivid, stable hues that are resistant to fading. Despite these advantages, synthetic dyes generate hazardous waste that can contaminate soil, sediment, and water, leading to environmental pollution. (Yasen & Scholz, 2018).

Certain dyes can degrade into carcinogenic and toxic compounds (Kant, 2012), raising concerns over the environmental impact of synthetic dyes. This has led to a growing interest in natural dyes, which are non-toxic, renewable, and eco-friendly. Public awareness of the dangers posed by synthetic dye waste has encouraged the shift toward natural alternatives to help protect the environment. Although synthetic dyes are widely used, natural dyes remain popular in the global textile industry (Nurmasitah et al., 2022). In Indonesia, natural dyes are treasured as a cultural heritage, especially in traditional crafts like batik and modern fashion design. In the trade industry, textile products dyed naturally are often incentivized to access specific markets with higher price points.

Various natural dyeing methods exist, with eco-printing being a prominent technique. The eco-print technique involves transferring color and patterns onto fabric through direct contact with plant materials (Flint, 2008). This process uses plant parts rich in pigments, such as leaves, flowers, and bark. Eco-printing can be achieved through different methods, including the pounding (beating) technique, steaming, and boiling (Rekaby, M., A. A. Salem 2009).

The motifs and colors of fabrics created through the eco-print technique are uniquely characteristic, as they vary unpredictably—even when the same methods and plant types are used. Factors such as the fabric type, mordanting

process, and fixation method further influence the final outcome, adding to eco-print's artistic value (Ulin Naini & Hasmah, 2021). In Indonesia, batik artisans have recently revitalized the eco-print technique. Traditional batik originally involved patterning by covering fabric with wax, but contemporary usage has evolved. Today, batik fabric can be fashioned freely and worn daily or even as travel attire, without the strict rules of ancient times (Flint, 2008).

Eco-printing presents a promising business opportunity in the fashion industry. The fashion business, accessible to almost anyone, thrives in the digital era, where social media simplifies promotion and trend-tracking. As a field requiring high levels of creativity and innovation, fashion provides an ideal setting for eco-printing—a business option that is creative, exclusive, and unique. By using local natural resources, eco-print products can be environmentally friendly, carry a high market value, and command premium prices.

METHOD

The research method used in this study is a literature review, which involves systematically collecting and analyzing existing knowledge from various sources to provide a comprehensive understanding of the topic. This review draws on a wide range of reference materials, including academic books, peer-reviewed articles, and research studies from both international and national journals. By synthesizing findings from these diverse sources, the literature review aims to identify key themes, trends, and gaps in the current knowledge.

RESULT AND DISCUSSION

Ecoprint businesses have significant potential for development, particularly in rural areas where the abundance of natural resources—such as lush trees, a variety of leaves, and fertile plants—provides ample materials for ecoprint production (Lestari, 2012). A similar initiative was demonstrated during a workshop organized by I.S.I. Yogyakarta for women from the Family Hope Program in Bangunjiwo Village, Bantul. Bangunjiwo, recognized as a cultural and tourist destination, benefited from this training by creating ecoprint products like masks, shawls, long cloths, scarves, and clothing, all of which proved marketable. If expanded, this program could generate promising business opportunities, especially given the village's appeal to tourists.

Further research by Desi and Ulfa (2018) examined how renowned Indonesian designer Ria Miranda, initially famous for her digital-printed Muslim fashion, shifted to ecoprinting. This strategic switch aimed to preserve her work's originality and prevent plagiarism, a common risk in the digital era (Nurcahyanti & Septiana, 2018). Ecoprinting offers a unique contrast to digital printing by producing exclusive, intimate, and individualized items, rather than the consistent, mass-produced results of digital techniques. With ecoprint, Miranda can brand herself as an eco-conscious designer, creating work distinguished by ethical, aesthetic, and sustainable qualities. Embracing eco-fashion as a concept and using ecoprinting as her primary technique, she aspires to enhance her brand's commitment to sustainability while setting new standards for environmentally friendly fashion.

In addition, the village has implemented a development program focused on cultivating various plants, which serves to enhance the skills of the Aisyiyah group and boost family income. During training sessions, the women of Aisyiyah were instructed in making batik using eco-print techniques, learning processes from mordanting and production to fixation. The eco-print batik items they created sold out quickly, demonstrating their market potential.

Similarly, in Wukirsari Village, Sleman, eco-print business training was conducted to empower the community and support government creative economy initiatives. This training, which uses locally sourced leaves as the main medium, is intended to inspire entrepreneurial interest and stimulate the village economy. Participants work with a variety of materials, from fabrics to natural dyes derived from leaves and flowers. Compared to standard or digitally printed fabrics, eco-printed fabrics are more unique, offering an elegant, high-quality aesthetic. Furthermore, the low initial capital required makes eco-printing an ideal business model for Wukirsari's local fashion industry (Mardiana, 2020).

Leveraging the abundant natural resources in the village has inspired eco-print training initiatives under the Community Partnership Program in Panggungharjo Village, Bantul. One key issue in this community is the limited skill set among women with low incomes, restricting their ability to capitalize on the area's natural resources. The eco-printing training utilizes a variety of plants, including teak leaves, strawberry, guava, and eucalyptus, among others, to create unique and vibrant designs.

In addition to eco-printing techniques, the women of Panggungharjo Village receive training on creating video tutorials for eco-print processes, which are intended for social media platforms, as well as online marketing techniques

for their eco-print products. This approach not only facilitates online learning, making eco-printing techniques accessible to a broader audience, but also serves as an effective digital marketing strategy.

The program has shown promising results, with many participants expressing interest in transforming their eco-print products into a sustainable business venture to supplement their income. The quality of the products created has proven to be marketable, meeting a high standard for sale (Naini & Hasmah, 2021).

Research by Endah and Dyah (2019) in Dukuh IV Cerme, Kulonprogo, identified issues with the limited effectiveness of community empowerment programs, which impacted residents' income outside of the agricultural sector. To address this, targeted training was provided, focusing on income-generating skills for women in the area. The program chose eco-printing as a suitable activity, utilizing the diverse local plant life in Dukuh IV Cerme.

Two types of training were conducted: one on creating eco-print products and another on producing video tutorials using natural materials. The eco-print product training proved successful, with 43.75% of participants expressing interest in continuing to produce and sell eco-print items, demonstrating motivation to boost family income through this new skill. Additionally, the video tutorial training enabled participants to access learning resources independently, allowing them to rewatch and practice at their convenience. These tutorials were also uploaded to social media, making them accessible to the broader public and promoting eco-printing as a sustainable business idea.

The eco-print technique offers a sustainable approach to dyeing textiles using plant materials and recycled iron waste. Research by Pressinawangi and Dian (2014) explored this innovative method, demonstrating that rusty iron waste can serve not only as a colorant but also as a mordant, enhancing the natural dyes applied to fabric. This technique yields deep, rich colors while remaining economically viable, as it utilizes readily available materials.

The process is notably efficient, requiring minimal time and effort for both dyeing and application. The resulting fabrics showcase unique, clear, elegant, and minimalist patterns, making them appealing in the fashion market (Presinawangi Kp, 2014). Various studies indicate that the eco-print technique presents a promising opportunity for environmentally conscious fashion businesses, as the products generated possess both artistic value and high market potential. Furthermore, numerous groups and associations in various cities are actively developing diverse eco-print methods, contributing to the growth of this sustainable fashion trend.

CONCLUSION

Ecoprint is a sustainable dyeing technique that imparts color and unique motifs to fabric by utilizing natural materials, such as flowers, leaves, stems, roots, or other plant parts containing colored pigments. An interesting dimension of this technique is its incorporation of rusty iron waste, as highlighted in the research by Pressinawangi and Dian (2014). This adaptation demonstrates the versatility of eco-printing, showcasing how natural materials can be innovatively combined to create vibrant dyes.

Research indicates that products made through the eco-print process possess high market value and appeal, characterized by their environmentally friendly nature, uniqueness, and exclusivity. As public awareness of environmental issues grows, there is a rising demand for sustainable products, further boosting the popularity of eco-print items. This trend positions eco-printing as a promising business alternative within the fashion sector, contributing to the broader movement of eco-fashion. By reducing reliance on synthetic dyes—which often generate hazardous liquid waste—eco-printing not only fosters creative expression in textile design but also plays a significant role in promoting environmental sustainability.

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