



EXPLORING SUSTAINABLE FASHION: CRAFTING DRAWSTRING BAGS WITH ECO-PRINTED FABRICS

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Abstract:

Purpose: This study explores the integration of sustainable fashion practices by crafting drawstring bags using eco-printed fabrics. The purpose is to investigate the potential of eco-printing, a technique that employs plant-based dyes, to create unique and environmentally friendly designs in everyday fashion items.

Research methods: A qualitative, experimental approach was used in this study. Eco-printing techniques were applied to natural fabrics such as cotton, linen, and hemp using plant materials (leaves, flowers, and bark). These fabrics were then sewn into drawstring bags, which served as a practical product to demonstrate the use of eco-printed materials in fashion.

Findings: The eco-printing process produced vibrant, organic patterns, with variations in color and design based on the plant materials used. The bags exhibited distinct, natural motifs, showcasing the uniqueness of each print. The results indicate that eco-printed fabrics offer a sustainable alternative to synthetic materials in fashion, with potential for broader applications in everyday items.

Implications: The study highlights the feasibility of using eco-printed fabrics in the fashion industry to reduce environmental impacts. It suggests that eco-printing can contribute to sustainable fashion by providing an alternative to conventional, resource-intensive production methods. Furthermore, the craft of making eco-printed accessories, like drawstring bags, can be an accessible avenue for consumers to engage in sustainable practices.

Keywords: Sustainable fashion, eco-printing, drawstring bags, natural fabrics, sustainable accessories, fashion innovation.

INTRODUCTION

The fashion industry is one of the largest contributors to environmental degradation, with fast fashion playing a significant role in this crisis. The overproduction of textiles, high energy consumption, water pollution from dyeing processes, and the widespread use of synthetic fibers all contribute to the industry's environmental footprint. As awareness of these issues grows, sustainable fashion practices are gaining momentum. The movement seeks to address the environmental harm caused by traditional textile manufacturing methods, offering solutions that prioritize both ecological responsibility and creative expression.

One of the innovative approaches to sustainable fashion is eco-printing, a technique that uses plant-based dyes to transfer the natural pigments from leaves, flowers, and other plant materials onto fabrics. Eco-printing is seen as an eco-friendly alternative to the synthetic dyes and chemical processes traditionally used in textile production. The process creates unique, one-of-a-kind designs, as the plant materials leave imprints and



colors that reflect the natural world. This method not only reduces the environmental impact of textile dyeing but also offers the potential for creating visually striking patterns that highlight the beauty of nature.

In response to growing environmental concerns, many consumers are now seeking alternatives to mass-produced, synthetic products and are increasingly drawn to items that embody sustainability. One such item is the drawstring bag, a versatile and practical accessory that has become an essential part of many people's daily lives. These bags are simple to make, functional, and can serve a variety of purposes—whether for carrying groceries, storing personal belongings, or as fashionable everyday accessories. What makes the drawstring bag even more appealing is its potential to be crafted from sustainable, eco-printed fabrics, providing a sustainable fashion alternative that combines both aesthetics and functionality.

This study aims to explore how eco-printing can be applied to the creation of drawstring bags. It investigates how natural materials can be used not only to reduce environmental impact but also to create attractive and unique fashion items. The intention is to explore the feasibility of creating a high-quality, sustainable product through eco-printing techniques, while also promoting the broader adoption of such practices in everyday life. By focusing on the production of these bags, this research seeks to demonstrate that sustainability can be seamlessly integrated into both the design process and the final product.

The growing interest in sustainable fashion has sparked conversations about the need for innovation within the industry. However, the movement still faces significant challenges, particularly regarding accessibility, scalability, and the integration of sustainable practices into mainstream fashion production. Through this journal, we aim to illustrate how small-scale, DIY projects can serve as a stepping stone toward larger shifts in the fashion industry, encouraging individuals and designers alike to consider alternative materials and methods that embrace sustainability. Additionally, this study will examine the potential for eco-printed fabrics to inspire future design practices, while also promoting a more mindful, eco-conscious approach to fashion.

RESEARCH METHODS

This study employs a qualitative, experimental research method to explore the creation of drawstring bags using eco-printed fabrics. The method was selected to investigate the practical application of eco-printing techniques in a real-world, accessible product—drawstring bags—while also examining the environmental benefits and aesthetic qualities of the fabric produced through eco-printing.

FINDINGS

This section presents the findings from the creation of drawstring bags using eco-printed fabrics. The study explores how eco-printing can be used as a sustainable technique in crafting functional fashion items like bags, emphasizing the potential benefits of using plant-based dyes and natural materials.

1. Introduction to Eco-Printing and Drawstring Bags:

Eco-printing, a method where natural plant materials are used to transfer pigments onto fabric, has gained attention as a sustainable alternative to synthetic dyes in the textile industry. The process not only produces visually striking designs but also minimizes the

environmental impact, as it uses locally sourced, biodegradable materials rather than harmful chemicals. In this study, the focus was on using eco-printing to create fabric for making drawstring bags, a practical, everyday accessory that exemplifies the possibility of integrating sustainable practices into fashion items.

Drawstring bags were selected because of their simplicity in design and functionality. These bags are universally used for various purposes—whether as fashion accessories, gym bags, or storage solutions—and offer a straightforward application for eco-friendly fabrics. Additionally, their design provides a perfect canvas to showcase the intricate patterns created by eco-printing.

2. Advantages of Drawstring Bags:

The choice of drawstring bags for this study brings several key advantages, both in terms of functionality and sustainability:

- a) **Versatility and Practicality:** Drawstring bags are highly versatile, serving a wide range of functions. They are commonly used for carrying gym clothes, groceries, personal items, or even as lightweight travel bags. The simplicity of the design makes them adaptable to various uses, and their drawstring closure provides easy access to items while also keeping them secure.
- b) **Lightweight and Space-Efficient:** These bags are lightweight and easy to store when not in use. Their compact nature makes them an excellent choice for people who want a practical, everyday bag that doesn't take up much space. This makes them ideal for individuals looking for eco-friendly alternatives that don't compromise on convenience.
- c) **Eco-Friendly and Sustainable:** Since the drawstring bags in this study were crafted using eco-printed fabrics, they contribute to the growing movement towards sustainable fashion. By using natural fabrics and plant-based dyes, these bags significantly reduce the environmental impact typically associated with textile production. Moreover, the longevity and durability of the materials used ensure that these bags can be used for a long time, minimizing waste.
- d) **Cost-Effective:** Drawstring bags are relatively simple to make and do not require expensive materials or complicated construction processes. This makes them a cost-effective option both for manufacturers and consumers looking to embrace sustainable alternatives without high production costs.
- e) **Reusable and Multi-Purpose:** One of the standout advantages of drawstring bags is their reusability. Instead of using disposable bags or single-use packaging, drawstring bags offer an eco-friendly and practical solution. They can be used repeatedly for various purposes, from grocery shopping to storing personal items, encouraging a reduction in single-use plastic.

3. Eco-Printing Technique:

The eco-printing technique utilized in this study involves transferring plant-based pigments to natural fabrics using three methods: steaming, rolling, and hammering. These methods produce different effects, allowing for a variety of textures, colors, and patterns on the fabric.

- a) **Steaming Method:** The steam method is the most traditional approach to eco-printing, where plant materials such as leaves, flowers, and bark are arranged on fabric and subjected to heat. The steam releases the plant pigments, which are then transferred to the fabric, creating delicate imprints. This method results in vibrant, well-defined patterns and is particularly effective for producing rich color transfer from plant materials.



Figure 1: Steaming Method
[Source : Pinterest]



Figure 2: Eco Print with Steaming Method
[Source : Pinterest]

- b) **Rolling Method:** The roller method involves tightly rolling plant materials inside the fabric, securing them with string or rubber bands, and then either steaming or leaving the roll to dry in the sun. The pressing and rolling action of this method helps to imprint the plant's natural pigments onto the fabric. While less intense than the steam method, the roller method creates soft, abstract patterns with a more subtle, textured appearance.



Figure 3 : Rolling Method
[Source : Pinterest]

- c) Hammering Method:** The hammer method is a more direct and hands-on approach to eco-printing. In this method, plant materials are placed on the fabric, and then a hammer or mallet is used to gently pound the plant matter, breaking it down to release its pigment onto the fabric. This process is repeated for each area of the fabric. The hammering method results in bold, dramatic prints, with the forceful imprints producing high-contrast patterns that can appear more rugged or artistic in style.



Figure 4 : Hammering Method
[Source : Pinterest]

4. Application of Eco-Printing to Drawstring Bags:

Eco-printing was applied to natural fabrics such as cotton, linen, and hemp, which are more sustainable and biodegradable compared to synthetic fibers. These fabrics were prepped by washing to remove any chemicals or finishes that would interfere with dye

absorption. Fresh plant materials were then selected and carefully placed on the fabric in the desired pattern.

Once the plant materials were positioned, the fabric was secured and subjected to one of the three eco-printing methods: steaming, rolling, or hammering. Each method imparted its unique characteristics to the fabric, producing different patterns, colors, and textures. The fabrics were allowed to cool and dry completely, and the plant materials were removed to reveal the eco-printed design.

As for the tools and materials to make ecoprint, they are: 1) Natural Fabrics: Cotton, linen, and hemp (these fibers were chosen for their sustainability and ability to absorb plant-based dyes); 2) Plant Materials: Leaves, flowers, bark, and other plant parts (e.g., eucalyptus, ferns, marigolds, and onion skins were used to create different color palettes); 3) Eco-Friendly Mordants: A mixture of vinegar and alum, which helped fix the plant dyes onto the fabric; 4) Steam Setup: A large steamer or pot with a steaming rack for the steam method; 5) Roller Setup: A rolling pin or cylindrical object for the roller method, along with string or rubber bands to secure the fabric; 6) Hammer: A mallet or rubber hammer for the hammering method; 7) Crafting Tools for the Bags: Scissors, sewing machine or hand-sewing needles, eco-friendly thread, and a ruler to measure fabric for cutting.

As for the Stages of Making the Fabric Print and Bag are: 1) Preparation of the Fabric: The first stage involved washing the fabric to remove any finishing agents, which ensured better dye absorption. The fabric was then cut to the required size for the drawstring bags; 2) Arranging the Plant Materials: Next, fresh plant materials were carefully placed on the fabric, either directly on the fabric or sandwiched between layers of fabric to create different effects. The choice of plants determined the color range, with lighter plants yielding softer tones, and darker plants producing more intense shades.



Figure 5 : Plant Arrangement
[Source : Pinterest]

- a) Eco-Printing Process:** Once the plant materials were positioned, the fabric was tightly rolled or folded and wrapped with string or rubber bands to hold the plant materials in place. Depending on the method selected, the fabric was either: 1) Steamed for 60-90 minutes (steam method); 2) Rolled tightly and exposed to the sun for natural drying or lightly steamed (roller method); 3) Pounded gently with a hammer to transfer pigments (hammering method).

- b) Cooling and Unwrapping:** After the eco-printing process, the fabric was allowed to cool. Once it had completely cooled and dried, the plant materials were carefully removed, revealing the eco-printed designs. The vibrant colors and detailed patterns left on the fabric showcased the success of the eco-printing technique.
- c) Construction of the Drawstring Bag:** With the eco-printed fabric ready, the next step was cutting the fabric into the appropriate size for a drawstring bag. The fabric was folded into a simple rectangular shape, with a casing at the top for the drawstring. Using either hand-stitching or a sewing machine, the fabric was sewn to create the bag shape, and a drawstring was threaded through the casing to complete the design. The simplicity of the drawstring bag allowed the eco-printed fabric to take center stage, highlighting the natural patterns formed by the plant materials.

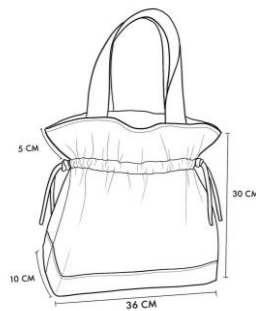


Figure 6 : Technical Drawing of Drawstring Bag
[Source : Mahadewi]

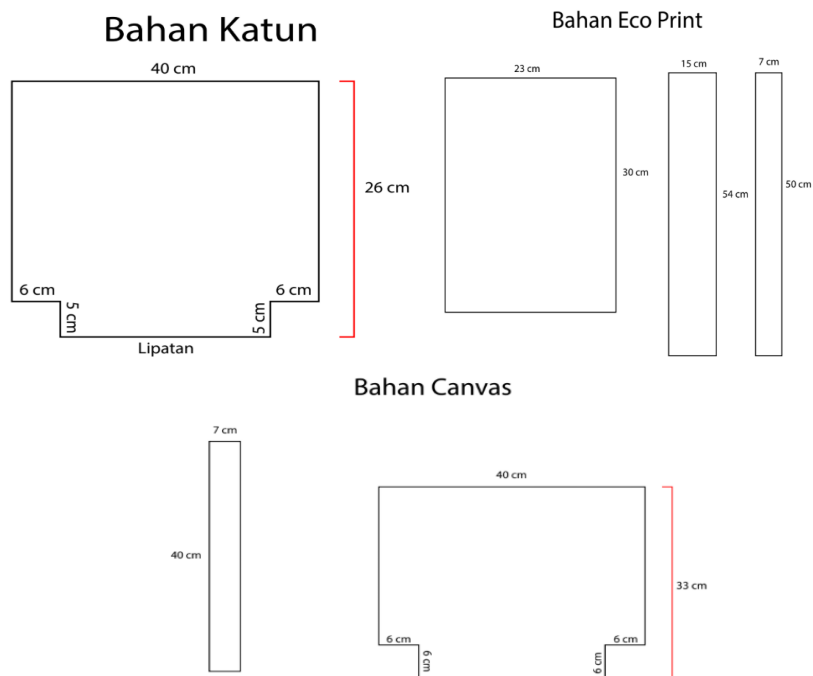


Figure 7 : Drawstring Bag Pattern
[Source : Mahadewi]

- d) Final Evaluation:** Once the bags were assembled, they were inspected for quality and functionality. The eco-printed designs were evaluated for their vibrancy, durability, and uniqueness. The final bags were tested for practical use, ensuring that they were strong enough to carry everyday items, while also retaining their aesthetic appeal. The feedback collected from users affirmed the attractiveness and utility of the bags, demonstrating that eco-printed materials can result in both functional and sustainable fashion items.



Figure 8 : Finish Product
[Source : Mahadewi]

CONCLUSION

This study has successfully explored the integration of eco-printing techniques in the creation of drawstring bags made from natural fabrics. By employing steaming, rolling, and hammering methods for transferring plant-based dyes onto cotton, linen, and hemp, the research demonstrates the sustainable potential of eco-printing in crafting everyday fashion accessories. The eco-printed drawstring bags produced in this study were not only visually appealing with their unique, nature-inspired patterns but also highly functional and durable, offering a practical alternative to synthetic materials.

The use of natural plant pigments instead of synthetic dyes significantly reduces environmental harm, aligning with sustainable fashion principles. Moreover, the simplicity and versatility of the drawstring bag design make it an ideal candidate for showcasing eco-printed fabrics. The study highlights how sustainable techniques, such as eco-printing, can be incorporated into mass-produced, functional items, thereby promoting the principles of reuse and sustainability in everyday life.

The eco-printing methods explored—steaming, rolling, and hammering—demonstrated their individual capabilities to produce a range of colors, textures, and imprints, each contributing its own charm to the final design. These techniques are simple, cost-effective, and can be scaled up for use in larger production settings, making them an ideal alternative for eco-conscious makers and businesses. In conclusion, this research contributes to the broader movement toward environmentally friendly fashion practices, proving that fashion can be both functional and sustainable without compromising on creativity or style.

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