

# DESIGNING SOUVENIR PRODUCTS WITH FOILING AND RUST DYEING TECHNIQUES INSPIRED BY SUNFLOWERS IN NANGGALAMEKAR VILLAGE, CIANJUR, WEST JAVA

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## ABSTRACT

The reason for this study is the reality in Nanggalamekar village, Ciranjang district, Cianjur county, regarding the potential of educational tourism with sunflowers. Given the limited insight and knowledge of the community to maximize the existing potential, it is necessary to improve the quality of human resources through the support and development of souvenir products. In this study, souvenir products were designed using research and development methods with a design thinking approach. Research result searches are the results of exploring foil and rust dyeing techniques with sunflower-inspired red colors. The prototype product from this research is in the form of a souvenir.

Keywords: natural rust color; foiling; sunflower; development; souvenir

## INTRODUCTION

Nanggalamekar village, Ciranjang district, Cianjur county, has exciting natural potential. One of the natural potentials of the village is the sunflower. Sunflower is cultivated by the local community and developed into a tourist village called Nanggalamekar Sunflower Education Tourism.

One of the problems in developing Nanggalamekar Sunflower Educational Tourism is the quality of human

resources in the village. These problems include the local community's lack of education, information, and productivity to develop the village's potential. Therefore, this study was conducted to improve the quality of human resources by helping in product development, especially in developing souvenirs as one of the products for developing tourist villages.

It is expected that the results of this study will give the community around Nanggalamekar Sunflower Education Tourism an insight into the village's potential and raise awareness so that the development of creative activities in the village can be initiated.

## **METHOD**

This research was conducted using research and development methods with a design thinking approach. Research and development methods are research methods used to produce specific products and test the effectiveness of those products. To produce specific products, analytical research is used to test the efficacy of these products; in order for them to work in the broader society, research is needed to test the effectiveness of these products using exploration methods (Sugiyono, 2019).

Design thinking is the process of developing creative ideas and concepts. There are 5 phases: empathizing, defining, ideating, prototyping, and testing. Empathize, or empathy, is used to understand the problem. Define is used to explain the situation. Ideate or develop ideas is used to find a solution to the problem. Prototype prototypes are done to bring innovative ideas to product execution. Tests or trials are conducted to get feedback (Darmalaksana, 2020).

Data collection techniques are conducted through literature studies, observations, interviews, and explorations. Literature studies are conducted offline and online using books and articles. Observations were conducted at Nanggalamekar Sunflower Education Tour to explore the potential and characteristics of the local community and sunflowers in detail. Interviews were conducted with experts in the field of design and tourist site administrators

to complete the research data. Methods of foil techniques and rust colors were explored during product development. The collected data is in the form of information and samples on souvenir products, foil techniques, rust colors, and sunflowers as a source of inspiration. The data samples are then analyzed qualitatively to produce prototype products.

## **RESULTS AND DISCUSSION**

### **Souvenir Products**

Products are goods or services offered to the market or consumers. The product is offered through buying and selling activities. Products can be sold if they benefit the consumers who buy them. The benefit of a product is the satisfaction of the needs and desires of consumers. The higher the utility of a product, the higher its value of a product (Zainuri, 2019).

A souvenir expresses gratitude or is a memento of an object or product. Souvenirs, as mementos, are made to remember a moment in a particular place. These places include tourist attractions so that consumers can perceive these tourist attractions through a product. Souvenir products can be made in a factory using machinery or on a small scale by hand (handmade). Handmade souvenirs have characteristics that cannot be produced by machines (Yeti, 2010).

### **Foiling Technique**

Foiling techniques fall under the category of two-dimensional textile design. Textile design is a design that aims to edit surface textures or enrich patterns and colors on the surface of the fabric. The variety of decorative or textile background motifs consists of geometric and organic shapes inspired by objects in the human environment or have abstract shapes. The function of the fabric is the most critical factor in planning the design development. Appearance and color play the leading role in esthetic appeal (Nadhiroh, 2015).

The foil technique is a textile processing method that uses adhesive and foil sheets. The adhesive material is a glue for the foils on the fabric's surface. These foils have the property

of glittering and sparkling. This property can be an esthetic attraction for textile products. Foil sheets come in various colors, including gold, silver, and copper.

Foil sheets adhere optimally with the help of the heat-setting process using a press. Heat setting is also a part of the finishing process in foil technology. Foil techniques belong to the category of paper transfer techniques.

Foil techniques are relatively easy to implement. The first step in this technique is to apply adhesive to the fabric according to the desired shape of the design. The second step is to apply sheets of foil to the adhesive while it is still wet. In the third step, heat the foil (heat setting) by pressing it with a press or rubbing it with an iron. In the last step, you peel off the foil when it has cooled down (Phipps, 2017).



Figure 1. Foiling paper

Source: UMBdg Kriya Research Team, 2022

### Rust Dyeing

Rust dyeing is the process of dyeing fabrics with easily rusty objects or metal. These metals include iron, brass, and copper. Rusting is a natural process with metals that corrode through contact with air, water, and moisture. This technique can be applied to both natural and synthetic fibrous materials.

This dyeing process produces an unusual and attractive color. These colors range from yellow to orange, red, and black. This dyeing process is also easy to apply to the fabric but is permanent on the fabric. Rust dye can be made from outdoor iron and is constantly exposed to oxygen and water, so it rusts more quickly to iron indoors. Rust is a red, orange, and yellow coating that usually forms from chemical processes on iron or other metal objects. Rust, whose scientific name is iron oxide, can only occur on two metals: iron and steel. Rust is a chemical change process that occurs naturally and causes corrosion or destruction of metal surfaces.

This phase of natural coloring begins with washing the material with water. The second step is to place a rusty or metallic object on the moistened cloth. The third phase consists of wetting the cloth and the rusty objects with vinegar and regularly wetting them to accelerate the corrosion process. The longer this process is carried, the



Figure 2. TFG BINDER foiling glue

Source: UMBdg Kriya Research Team, 2022



Figure 3. Pole wrapping process

Source: UMBdg Kriya Research Team, 2022



Figure 4. Iron filling process

Source: UMBdg Kriya Research Team, 2022



Figure 5. Bound resisting process

Source: UMBdg Kriya Research Team, 2022

darker and richer the color will be. The fourth step is to dip the cloth in a salt solution to neutralize the fabric from the corrosion processes. The last step of this process is drying and ironing the cloth.

Natural rust dyeing techniques include bar wrapping, tying, and iron filling. In bar wrapping, cylindrical metal is wrapped with a kneaded cloth. In this technique, some parts of the cloth are protected from the corrosion process with knots) The iron filling is a technique in which metal is inserted between textile fibers (Ross, 2015).

### Sunflower

Sunflower belongs to the genus *Helianthus* and the family *Asteraceae*. Sunflowers have the characteristic of heliotropism, as they always face the sun and follow the movement of sunlight.

Sunflowers have characteristic large petals and tall stems. The petals of this flower are generally bright yellow, with a brown halo in the center and leaf-green color. Sunflowers have tubular flowers that are small around the stem. The characteristics of sunflower colors and the natural shapes of these organisms were the inspiration for this study.

Sunflower varieties include Giant Sun Gold, Teddy Bear, Big Smile, Earth Walker, Fiesta Del Sol, Cherry Rose, Early Russian, Music Box, Red Sun, Moonwalker, Velvet Queen, Pacino, and Autumn Beauty. Each sunflower variety has different characteristics (Hejo, 2016).

### Discussion

This research uses research and development methods with a design thinking approach. Design thinking is a process or method to empathize with human-centered problems and issues. Design Thinking is also associated with processes and governance for product and service innovation in the business and socio sector. This study has five stages in the design thinking process: empathize, define, ideate, prototype, and test.

#### 1. Empathize

On Thursday, July 7, 2022, the research team collected data at the site of Nanggalamekar Sunflower Education Tourism,

Ciranjang, Cianjur. Data collection was also done by visiting the Nanggalamekar Village Office. In Nanggalamekar Village Office, the research team interviewed the village chief, Mr. Hilman, S. Kom., who knows and understands the different conditions of the Nanggalamekar community and village. After the interview, the research team conducted observations in Nanggalamekar Village.

Based on the interviews and observations, the village of Nanggalamekar has quite interesting natural potential. However, the site in the form of common land has not been adequately cultivated and organized. The site studied by the research team is the land that will be used to expand sunflower cultivation. It is expected that the expansion will help to promote Nanggalamekar village as a sunflower tourism village.

Mr. Hilman, S.Kom. as village head, also said that Nanggalamekar village would hold a cultural festival as a kind of 'village festival.' He hopes that this event, although small in scale, will significantly impact both the inside community in the village and the community outside the village.

## 2. Define

Based on an interview with the village head of Nanggalamekar, there are three problems in developing the village's potent ideas, marketing and capital. The problem described by the village head of Nanggalamekar will undoubtedly be a concern that the research team will pay attention to. The problem of ideas will certainly have to do with the various information received and the ability to process it. Another classic problem is that capital is a significant obstacle in a company. A solution can also be sought for this, as well as for marketing problems

In the area of product marketing, many things need to be considered, especially related to packaging or branding. Many related activities can be done to facilitate the planning and research process. However, due to limited time, cost, and expertise, the research team in this study will focus on the problem of developing ideas that come from the potential of Nanggalamekar village.



Figure 6. Nanggalamekar Village Area, Cianjur Regency

Source: UMBdg Kriya Research Team, 2022



Figure 7. Sunflowers in Nanggalamekar Village, Cianjur Regency

Source: UMBdg Kriya Research Team, 2022



Figure 8. Natural stone as a marker of Nanggalamekar Village, Cianjur Regency, village festival location

Source: UMBdg Kriya Research Team, 2022



Figure 9. Planning Design work process

Source: UMBdg Kriya Research Team, 2022



Figure 10. Moodboard-inspired colors and shapes in the souvenir design process

Source: UMBdg Kriya Research Team, 2022

### 3. Ideate

The village chief and the research team established generative idea processing based on information and communication. Based on the results of the discussion and the problems identified in the field, the research team has the idea to produce a product that will serve as a souvenir for the cultural festival in Nanggalamekar village. Essential personalities from the village and outside the village will be invited to the opening of the cultural festival.

### 4. Prototype & Test

The selection of a souvenir product that is specially designed must have a novelty, good quality and y, and exceptional time value from souvenir products already on the market. These values are explored using specific techniques, materials, and colors in the design thinking phases, and then prototyping and testing are done in the design phases. The selection of techniques, the dyeing process, the use of materials, the shape of the souvenir designs, and the packaging until the time of the village feast is an essential process excess in the research.

The design process in this study consists of several phases aligned with the goal and funding. The field observation

NO	MATERIAL	DESCRIPTION
1	Scouring process Material: kostik soda NaOH /flake caustic (caustic soda)	Washing or soaking fabrics with Kostic soda as a Ph. neutralizer to remove residues, fats, and impurities on the fabric.
2	Mordanting process 1. Soda ash or soda ash (granulated form, is an alkaline salt of sodium carbonate that is easily soluble in water to make it easier to clean the fabric) 2. Alum (as a reinforcement of fabric dyeing and increasing resistance to fire) 3. TRO (as an alkaline wetting agent to facilitate the absorption of dyestuffs on and fabrics)	a. The mordantpro cleansing of the material from dirt is one of the stages that must be carried out at the beginning of the dyeing process. b. Mordant Atlantis is essential in preparing fabric materials so they can receive/absorb dyes well. c. The use of mordant material as a color reinforcement so that the fabric is more resistant to fading.

3	Fixation material (color locking) 1. Alum (aluminum sulfate/alum [Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> K <sub>2</sub> SO <sub>4</sub> 24H <sub>2</sub> O), 2. Chalk = lime Ca(OH) <sub>2</sub> 3. Tunjung = fero sulfat/tunjung (FeSO <sub>4</sub> )	a. The fixation process is the process for reinforcing or locking staining. b. Fixation using alum will produce a color in the direction of bright or light color. c. Fixation with chalk the color will change rather old from the original color. d. Fixation using color tunjung will be older/darker.
4	Rust staining process	a. Soaking various kinds of iron and metals for two days to produce rust liquid, longer the soaking process will be better to produce a more concentrated rust liquid. b. The rust solution from soaking various ferrous materials and scrap metals is filtered and stored in bottles. c. Sieve rust water can be used as needed

Table 1. The process of fabric preparation and rust dyeing  
 Source: UMBdg Kriya Research Team, 2022
















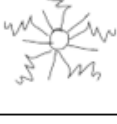
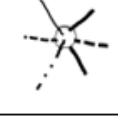
SUNFLOWER INSPIRATION	FORM STUDIES			
				
				
				
				

Table 2. The study of sunflower forms by distillation  
 Source: UMBdg Kriya Research Team, 2022

phase is conducted to see the reality of field conditions and various other possible supporters. The data analysis in the field determines the phases of identifying ideas and conceptions to develop them in the study phase. The results of conversations and interviews are essential to support the



### MODEL TOTE BAG 1



### EKSPLORASI PELETAKAN MOTIF

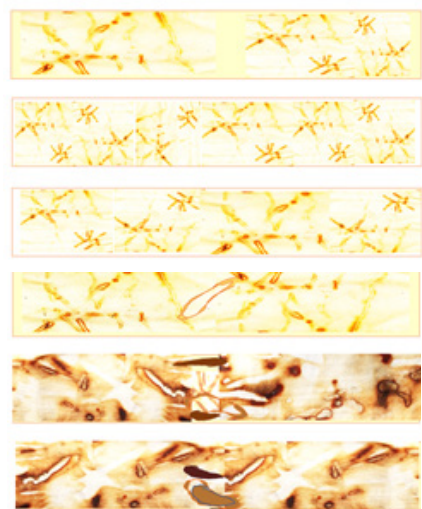
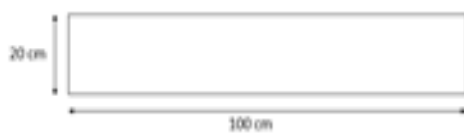
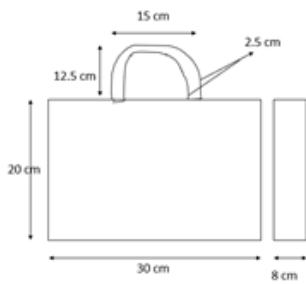


Table 3. Simulation of foiling motif placement on souvenir products  
 Source: UMBdg Kriya Research Team, 2022

data collected during the observation process.

The study and exploration process was conducted to create several possible souvenir designs that use rust coloring, inspired by the color of sunflowers and specific shapes resulting from the distillation process and the abstraction of sunflowers and other organic shapes.

## CONCLUSION

Research motivated by the reality in Nanggalamekar village, Ciranjang district, Cianjur county, in terms of natural potential and relatively unequal educational level, has the opportunity to create synergy in this research program. The younger generation's human resources are the Beebe's potential to support and achieve the goals in the development of their villages. The limited insight and knowledge of rural communities, especially the younger generation, to maximize the existing potential is a challenge for the research team to cooperate, synergize, and collaboratemanagingt towards natural wealth.

Improving the quality of human resources is done through mentoring and developing the regional potential to produce souvenir products that can become both an identity and a source of income for tourism and education plans of the villages. The research and development method with a design thinking approach is considered one of the appropriate methods to align with the cultural assumptions and traditions of the Nanggalamekar village community.

The research team suggests that there is a continuity of research that can be applied as a mentoring process until the goal of producing tangible benefits. Village development with all aspects surrounding it can be done collectively, which amounts to a community of people supporting change toward improvement in various areas. Research concepts that aim to produce prototypes and final products require process and consistency. For this reason, the support of Muhammadiyah College Bandung, village officials, and local communities becomes a symbiotic relationship of mutual support in achieving common goals.



Figure 11. Drawing of tote bag and shawl sewing pattern (sash)

Source: UMBdg Kriya Research Team, 2022



Figure 12. The results of ornamental design with a foiling technique

Source: UMBdg Kriya Research Team, 2022



Figure 13. Baby canvas tote bag products with various variants of placing motifs on the pocket

Source: UMBdg Kriya Research Team, 2022



Figure 14. Small shawl (sash) product of Tencel material with one-sided motif laying  
Source: UMBdg Kriya Research Team, 2022

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