

# Introducing Natural-Dyed Shibori Fabrics for Moslem Community Empowerment Project in Japan

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**Abstract.** *Shibori* has been one of the ways of dyeing textiles in Japan since the 8th century. Fashion fabric Using the *shibori* dyeing technique will not be monotonous and will be liked by Japanese and Indonesian people. In Indonesia, *shibori* techniques also began to be widely practiced among fashion activists to attract consumers. However, the Moslem Women Indonesia Community in Ishikawa, Japan, has yet to be exposed to any insight into *shibori's* dyeing technique. *Shibori* can also become an alternative to sustainable fashion. Thus, a *shibori* dyeing workshop is necessary to provide opportunities for them to create and develop businesses in the fashion sector. This study aims to introduce a natural-dyed shibori fabric for Indonesian Moslem women in Kanazawa, Japan, to help them understand how to make *shibori* motifs and coloring. Based on the results after a workshop of 15 participants, 100% knew about *shibori*, 90% could make steps of *shibori*, and 95% knew the *shibori* dyeing technique. The result proves that the knowledge and skill required to make *shibori* among participants have improved. They can practice directly developing business fashion and make a business idea using the *shibori* fabric. Keyword: *Shibori* fabrics, Sustainable fashion, Natural-dyed, Ishikawa Moslem Indonesia

## 1 Introduction

Fashion is one of the essential parts used by someone to support appearance. The importance of fashion makes the fashion industry develop. The fashion industry operates in a highly competitive market dominated by global brands. In recent times, despite the deep financial crisis of the last decade, the fashion industry has attained fast growth and has experienced vast transformations[1]. The fashion business is intrinsically linked to consumer wealth, and as the global population increases, the need for innovative and increasingly sophisticated apparel appears insatiable [2]. Fashion is related to culture, and [3] fashion is related to external cultural factors, but identifying this link remains a manual process limited to only

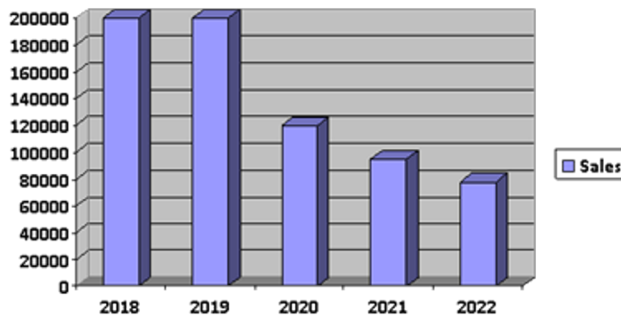
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the most prominent phenomena. Fashion is related to culture and external cultural factors, but identifying this link remains a manual process limited to the most prominent phenomena [4].

One that is famous for its culture and fashion is Japan, especially Kanazawa. Kanazawa is located in the Hokuriku region of Japan. Kanazawa remains an important city in its region and serves as the capital of Ishikawa Prefecture. Kanazawa grew to become a town of outstanding cultural achievements[5]. Kanazawa is a city where Japanese culture's "real" heartbeat still beats. Step into the castle town that boasts authentic Japanese culture and an artistic flair established by samurai over 400 years ago [6]. The city of Kanazawa's high culture provides opportunities for the Ishikawa Moslem Community of Indonesia, especially Moslem women, to create and develop businesses in the fashion sector using the Shibori technique. *Shibori* is decorating fabrics by making specific patterns by dipping the fabric.

*Shibori* became a choice for creating and developing a fashion business in Indonesia and Japan. Making clothes or crafts using the shibori technique will be better known by the Japanese, making it easier to market these fashion products. Indonesia's Moslem women community in Kanazawa has not been exposed to any insight about *shibori's* dyeing technique on fabric materials. Several Ishikawa Indonesian Moslem women communities already have businesses in the field of fashion online and offline. However, they inform us that sales in Japan are pretty tricky due to a lack of buyer interest. Based on observations, here is a graph of sales data for one of the fashion businesses in the Indonesian Moslem community, Ishikawa.



**Fig. 1.** The sales of the Muslimah Japan store in Ishikawa, Japan

Based on the data, 2018's income was 200,000 Yen, and there was still no change in 2019. Then, in 2020, revenue fell by 150,000 Yen. From 2021 to 2022, because of covid 19, income decreased to 78.000 yen. The data shows the partner's problems. One way to increase sales is to expand the market by selling products to Japanese people and using natural-dyed shibori fabric in the product for Japanese trust.

The Shibori fabric dyeing technique from Arimatsu, Nagoya province, Japan, was popular in 1608 because of its intelligent ancient method that took time to create complicated yet well-organized and beautiful patterns [7]. Shibori is the most primitive tie-dyeing technique performed more or less in various regions of the world [8]. *Shibori* has been one of the ways of dyeing textiles in Japan since the 8th century. *Shibori* fabric dyeing techniques include stitching, tying, twisting, clamping, and wrapping[9]. In cloth processing, the art of *shibori* uses many techniques. Not only squeezing, pinching, and pressing, but the Shibori technique gives a three-dimensional shape by folding, kneading, stitching, tying, and twisting[10].

The Arimatsu-shibori type of tie-dye was invented as a simplified process for dyeing patterns on cotton hand towels (*tenugui* 手拭い). It used a tying stand for a less labor-intensive production of the knots necessary for *shibori* tie-dye[11]. *Shibori* coloring techniques include *Kanoko Shibori*, *Miura Shibori*, *Arashi Shibori*, *Itajime Shibori*, *Kumo Shibori*, and *Nui Shibori*[12]. Arashi shibori requires the fabric to be pleated systematically and securely by binding it to a tube of considerable diameter. Thereafter, the fabric was immersed in dye and released. The bind generated an irregular geometric design like a willow tree[13].

*Shibori* also become an alternative to sustainable fashion, for fast fashion has become a global phenomenon that impacts the environment. The fashion sector is currently facing scrutiny over sustainability due to its significant environmental impact[14]. Sustainable fashion refers to apparel that minimizes environmental harm, is constructed from organic materials, and aligns with the emerging design philosophy and trend of sustainability, which aims to establish a system that can be perpetually maintained regarding human impact on the environment and social accountability. It can be perceived as a countertrend to quick fashion [15].

Fashion fabric Using the *shibori* technique, fashion materials will not be monotonous. Japanese and Indonesian people will like them, and [16] Indonesians immensely love the Shibori technique because it is simpler, and the manufacturing process is faster than batik making. *Shibori* techniques also began to be widely practiced among fashion activists to attract consumers in Indonesia, especially in Japan. Therefore, business opportunities in the fashion sector will develop by Indonesians and the Japanese.

Based on business opportunities, sustainable fashion, and Japanese culture, it is essential to introduce a natural-dyed shibori fabric for the moslem women Indonesian community in Ishikawa, Japan, and help them understand how to make *shibori* motifs and coloring.

## 2 Methodology

The implementation method in this paper was the lecture method and face-to-face training that was held in several meetings. The lecture method effectively teaches material at once and is a learning process for developing knowledge[17]. The respondents were taken from the *shibori* practice, with 15 participants recruited through open registration provided for the Ishikawa Indonesian Moslem women community in Kanazawa, Japan. The lecture method provides material about *shibori*, which consists of various techniques, such as coloring and *shibori* making who taught by the head of the Indonesia eco-print association as the trainer. Face-to-face training is used to teach directly the making of *shibori* techniques and dyeing with natural dyes.

The data collection in this paper was tested, namely pre-test and post-test. The test is used to determine how much the participant is capable[18]. The pre-test is given at the beginning before training. A post-test is given at the end of the training. Furthermore, the instrument was tested in a quiz using the following four key points: knowledge of *shibori*, *shibori* dyeing technique, process of *shibori*, and steps of making *shibori*. In addition, the data analysis was processed using a data test with a t-test statistic.

The implementation consists of three stages:

## 2.1 Forum Group Discussion

A forum group discussion was held to offer a solution to increase Pasca Covid sales. One way to increase sales is to expand the market by selling products to Japanese people and using natural-dyed shibori fabric in the product for Japanese trust. The team will hold a training program to introduce natural dyed shibori fabric for Indonesia's Ishikawa Moslem Women community. *Shibori's* dyeing technique on fabric materials will be used as clothing and transformed into a more valuable product.

## 2.2 Introduce Dyed *Shibori* Fabric

Here are the materials needed for making *shibori* [19]

1. Fabric (cotton, silk, or linen work well)
2. Natural dye materials (such as indigo, turmeric, madder root.)
3. Mordant (like alum or soy milk) to help set the dye
4. Rubber bands, strings, or clamps for binding
5. Large pots for dyeing
6. Gloves (to protect your hands from the dye)

## 2.3 Workshop on Making *Shibori*

### 2.3.1 Prepare the Fabric

Wash the fabric to remove any dirt or residues that might interfere with the dyeing process. Pre-treat the fabric with a mordant if needed to help the natural dye adhere better. Follow the instructions for the specific mordant you are using.

### 2.3.2 Prepare the Natural Dye

Depending on the dye material, you might need to extract the dye from plants or other natural sources. Follow specific instructions for preparing the dye you have chosen.

For instance:

1. Indigo dye often needs to be prepared for fermentation.
2. Turmeric might be boiled to extract its color.
3. Madder root may require soaking and simmering.

### 2.3.3 Fold, Twist, or Bind the Fabric

This step is where *shibori* gets its distinct patterns. There are various ways to fold, twist, or bind the fabric:

1. Accordion folds
2. Tie-dye techniques with rubber bands or strings
3. Stitching patterns to create resist areas
4. Using blocks or clamps to create pressure points

### 2.3.4 Dyeing Process

Once the fabric is prepared and folded/bound, immerse it into the prepared natural dye solution. Ensure the fabric is fully saturated. Follow the dye's specific instructions regarding soaking time and temperature. Some dyes require more extended soaking periods or repeated dips for richer colors. For indigo dye, remember that it oxidizes and changes color after exposure to air, so consider allowing the fabric to "breathe" and change color between dips.

### 2.3.5 Rinse and Unfold

After dyeing, rinse the fabric thoroughly with cold water to remove excess dye. Unfold or untie the fabric carefully to reveal the unique patterns created by the Shibori technique.

### 2.3.6 Final Treatment

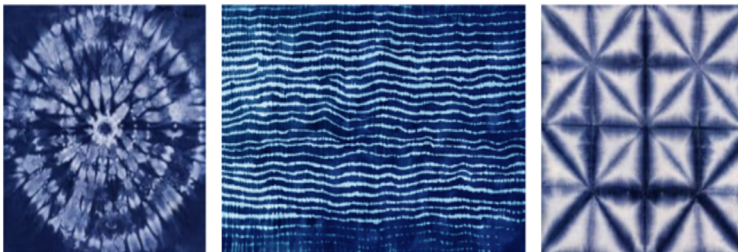
Depending on the dye used, some fabrics might require a post-dye treatment to set the color and remove any remaining dye. Follow specific instructions for aftercare.

### 2.3.7 Drying and Finishing

Hang the dyed fabric to dry and away from direct sunlight. Iron the fabric (if appropriate for the fabric type) to set the dye and give it a finished look.

## 3 Results and Discussion

Shibori is a traditional Japanese textile technique that categorizes patterns formed on fabric using methods such as plucking, sewing, folding, and subsequently knotting, binding, or clamping to compress and selectively impede dye absorption [20]. Using natural dyes adds an organic touch to this process. Several famous Shibori patterns are widely applied. Among them are the *Kanoko* technique or circle motifs, *Itajime* or square motifs, and *Arashi*, which resembles spiderweb patterns.



**Fig. 2.** Examples of *Shibori's* pattern used in the training

### 3.1 Data Test Result

In the *shibori* training, the material knowledge about shibori techniques and stages of making *shibori* is first provided. Here is the list of participants.

**Table 1.** The *Shibori* workshop participants

No	Name	Origin (Indonesia)	Resident Area (Japan)
1	HB	East Java	Kanazawa
2	DN	Central Java	Kanazawa
3	MY	Jakarta	Okuwamachi, Kanazawa
4	LD	West Java	Okuwamachi, Kanazawa
5	AC	West Java	Kamiwakamatsucho, Kanazawa
6	LS	West Java	Kanazawa
7	RM	West Sumatra	Kanazawa
8	KH	Jakarta	Okuwamachi, Kanazawa
9	MD	Riau	Asahimachi, Kanazawa
10	AM	West Java	Okuwamachi, Kanazawa
11	LL	West Java	Asahimachi, Kanazawa
12	VA	Aceh	Kanazawa
13	NA	Kepri	Kanazawa
14	AS	West Java	Kanazawa
15	AB	Jakarta	Kanazawa

Data processing in this paper used test instruments, namely pre-test and post-test. Pre-test and post-test scores are calculated first, after which they are measured using t-test statistics to determine the increase in knowledge and skills of workshop participants. Here are the results of the pre-test and post-test.

**Table 2.** The results of the pre-test and post-test

No	Name	Pre-test	Post-test
1	HB	20	85
2	DN	10	80
3	MY	60	100
4	LD	40	90
5	AC	50	100
6	LS	20	80
7	RM	40	100
8	KH	60	100
9	MD	60	100
10	AM	50	100
11	LL	20	90
12	VA	40	100
13	NA	10	90

14	AS	30	95
15	AB	30	95

The table above shows the results of the pre-test and post-test of 15 participants. The highest score for the pre-test was 60, with a total of 3 people, and the lowest score was 10, with a total of two people. The best post-test score is 100, which totals seven people, and the lowest score is 80, which totals two people. To determine the average and standard deviation of pre-test and post-test processed by descriptive statistics.

**Table 3.** The Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test	15	10	60	36	17.647
Post-test	15	80	100	93.67	7.432
Valid N	15				

Based on the descriptive statistics test, the average score on the pre-test was 36, and the average score on the post-test was 93.67. Participants experienced increased scores after the workshop was given. After knowing the pre-test and post-test scores, the next step is calculating the t-test using IBM SPSS version 23.

**Table 4.** The results of the t-test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest	57.667	12.228	3.157	64.438	50.895	18.265	14	.000

Based on the t-test results above, the t-test value is 18,265, and the df is 14. So, the t-table value is 2,145. Thus, it can be concluded that the t-test results are more significant than the t-table ( $t\text{-test}=18,265 > t\text{-table}=2,145$ ), meaning a significant difference exists between the pre-test and post-test scores.

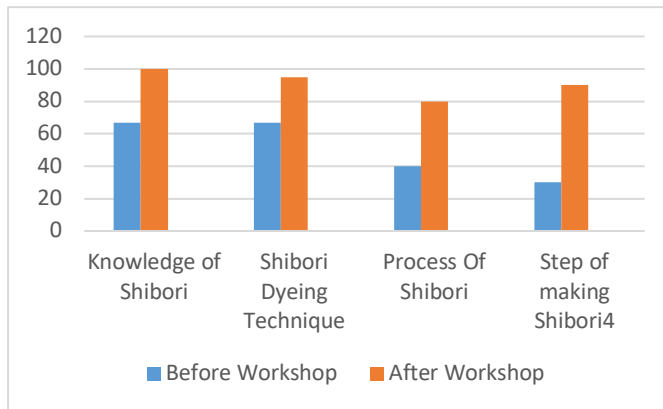
### 3.2 Finding

In subsequent training, the practice of directly making *shibori* motifs, namely *itajime*, *kanoko*, and *arashi*. Participants made *shibori* from the mordant scarf with all three motifs mentioned. Participants can make one scarf using various shibori techniques and make the following results of shibori motifs.



**Fig. 3.** One of the *Shibori* created by participants

The following are the results before and after the *shibori* workshop about knowledge and the steps to make *shibori*.



**Fig. 4.** The result of the before and after workshop

Based on before and after the workshop results of 15 participants, 66.7% of participants knew about *shibori* before, and 100% knew about *shibori* after the workshop. 66.7% of participants knew about the Shibori dyeing technique before the workshop, and after the workshop, they reached 95%. 40% of participants knew about the process of *shibori* before the workshop, and 80% knew about the process of *shibori* after the workshop. 30% of participants know about the steps of making *shibori* before, and 90% know about the steps after the workshop.

The result of the *shibori* workshop showed that the participant's skills and knowledge had improved so that it could inspire fashion business activists of the muslim women community in Kanazawa, Japan. *Shibori* is well-known in Indonesia, and many women's empowerment training programs use the *shibori* technique. In 2022, Himmah et al[21] held a *shibori* dyeing training, and the results were various colors. This training also showed that the participants did well with the *shibori* technique. Setyaningsih, et al[22] also conducted training for women living in tourism areas to increase income, and the result was that the participants could make *shibori* dyeing.

*Shibori* is already famous in Indonesia, as evidenced by the existence of training for women's empowerment. It even combines batik motifs with *shibori* motifs, namely *shibotik*. Combining the two motifs is a cross-cultural collaboration that could create a beautiful storytelling fabric[23]. Therefore, the *shibori* dyeing technique has excellent potential for Ishikawa Muslim Women Indonesia to develop or create a business idea in the fashion field.



Making *shibori* fabric is a job that anyone can do, anytime, anywhere, and is essential in fostering the desire to become an entrepreneur[24].

This study only focuses on knowledge about *shibori* and how to make *shibori* with several techniques, even though there are still many techniques for making *shibori* that can be explored and taught. The workshop also explained natural dyeing and *shibori*, which are sustainable fashions. In the future, it is necessary to teach the collaboration of Indonesian batik motifs or jumputan with Japanese *shibori* motifs to make beautiful fabrics to attract consumers. In addition, it also makes traditional Indonesian clothing models and combines them with Japan. For those who have not become entrepreneurs, it is necessary to introduce how to market the *shibori* fabric products that have been made.

## 4 Conclusions

The result of the *shibori* workshop showed that all participants could make *shibori* well with the techniques taught. 80% of participants knew the process of making *shibori*, and 90% knew the steps. In addition, they also use natural dyes on shibori fabrics, which is 95% of the shibori dyeing technique. The results can be concluded that shibori training is successful. They can develop a business with sustainable fashion for those who have been in the fashion business and as a business idea for those who do not have a business. The natural dyeing technique using *shibori* is expected to be an alternative in the field of fashion to generate more income for women of the Islamic community of Ishikawa, Indonesia, in Japan because it is closer to Japanese culture. They can use shibori motifs to expand the market not only for Indonesians but also for Japanese people.

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