

## THREE DIMENSIONALITY ON TEXTILE SURFACES WITH THE SHIBORI TECHNIQUE

### SHIBORİ TEKNİĞİ İLE TEKSTİL YÜZEYLERİNDE ÜÇ BOYUTLULUK

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**ABSTRACT:** Providing aesthetic and functional diversity through surface manipulations in textile design is becoming increasingly important. Three-dimensional effects can be achieved using on textile surfaces using the Shibori technique, a traditional Japanese folding, puckering, and binding method. The primary aim of this study was to obtain three-dimensional and richly textured surfaces by using different variations of the Shibori technique on cotton fabric surfaces. Thus, it is an experimental study that both contributes to the integration of traditional handicrafts into contemporary textile design and explores innovative surface design possibilities. In the applications, the combination of Shibori, originating from East Asia, and traditional motifs specific to Anatolia have created new and original designs. The intervention of Shibori techniques into the fabric's structural form has enabled the colors to gain depth and the surface to take on a dynamic and lively appearance. The study sought answers to the questions of whether the Shibori technique is an effective method for creating three-dimensional visual and tactile effects on textile surfaces and to what extent the Shibori technique is effective in creating a three-dimensional aesthetic and cultural expression on textile surfaces when synthesized with traditional Anatolian motifs. As a result, six three-dimensional textile surfaces that carry both aesthetic and cultural value have been created by combining traditional techniques with contemporary design understanding.

**Keywords:** Shibori, Japan, Three-Dimensionality, Pattern, Fabric Surface

**Öz:** Tekstil tasarımında yüzey manipülasyonları ile estetik ve işlevsel çeşitlilik sağlamak giderek önem kazanmaktadır. Geleneksel Japon katlama, büzme ve bağlama yöntemi olan Shibori tekniğini kullanarak tekstil yüzeylerinde üç boyutlu efektler elde edilmektedir. Bu çalışmada, pamuklu kumaş yüzeylerinde Shibori tekniğinin farklı varyasyonları kullanılarak üç boyutlu ve zengin dokulu yüzeyler elde etmek amaçlanmıştır. Böylelikle hem geleneksel el sanatlarının çağdaş tekstil tasarımına entegrasyonuna katkı sağlamayı hem de yenilikçi yüzey tasarımı olanaklarını araştıran deneysel bir çalışmadır. Yapılan uygulamalarda, Doğu Asya kökenli Shibori ile Anadolu'ya özgü geleneksel motiflerin birleşimi, yeni ve özgün tasarımlar ortaya koymuştur. Shibori tekniklerinin kumaşın yapısal formuna müdahalesi, renklerin derinlik kazanmasını ve yüzeyin hareketli, dinamik bir görünüme bürünmesini sağlamıştır. Shibori tekniği, tekstil yüzeylerinde üç boyutlu görsel ve dokunsal etkiler oluşturmak için etkili bir yöntem midir ve Shibori tekniği, geleneksel Anadolu motifleriyle sentezlendiğinde tekstil yüzeylerinde üç boyutlu bir estetik ve kültürel ifade yaratmada ne derece etkili olmaktadır sorularına yanıt aramıştır. Sonuç olarak, geleneksel tekniklerin çağdaş tasarım anlayışıyla

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*buluřturularak hem estetik hem de kltrel deęer tařıyan  boyutlu altı adet tekstil yzeyi oluřturulmuřtur.*

**Anahtar Kelimeler:** Shibori, Japonya,  Boyutluluk, Desen, Kumař Yzeyi

## Introduction

Coloring and patterning of fabrics, dyeing different fabrics, and have personal embellishment been going on since ancient times. Humanity has always been in an effort to improve and beautify its life. Shibori, a tradition that has existed for centuries, is also practiced in Western countries, particularly in Japan. Used as a method of dyeing and patterning fabric, shibori art is crucial in the textile industry.

The term Shibori originates from Japanese, meaning turning, squeezing and pressing. It is a dyeing process that aims to create different patterns by binding the fabric before dyeing, reducing the penetration of dye into the bound areas. Shibori is a dyeing method that adds dimension to the fabric. It is done in Japan, India, China, South America and some parts of the Asian continent (Fıçıcıoęlu, 2015: 185).

Shibori gives a three-dimensional appearance as well as coloring the fabric surface (Halaeli, 2011: 32). The important feature of shibori is that the edges of the pattern are blurry and soft. This differs from the sharp-edged appearances obtained with stencils or wax in batik. The pattern is formed in an undyed space. The pattern is not controlled, the color spreads on its own. The patterns are created freely and beautifully (Cousin, 2014: 1).

Shibori is also known as batik dyeing in Turkey. This traditional art, which has a long history, has been the starting point of batik dyeing fashion since the 60s. The techniques used in Shibori applications such as bending, squeezing, binding, sewing, folding, wrapping. Do not allow the dye to penetrate, creating different and unique patterns and giving the fabric a three-dimensional form.

The successful results of these techniques are also related to the quality of the dye used and the use of cellulose fiber fabrics such as silk, cotton, wool, and linen. Today, Shibori fabrics are used to make clothes, curtains, shawls, pillows, and home decoration products. Shibori is also artistic with its labor-intensive production and unique feature of being a one-of-a-kind.”

At its core, Shibori is a technique that; shibori has the potential to create shaped and dyed designs. It is the result of the pressure created by the thread that tightens the shape by dipping the fabric into the dye. The fabric reacts to the pressure and the pressure created on the fabric is a product of the memory of the shape (Wada, 2002: 9).

## **Purpose of the Research**

This study investigates the potential of Shibori, a traditional Japanese dyeing technique, to generate three-dimensional effects on textile surfaces.

This article aims to adapt traditional applications of the Shibori technique to modern textile design, achieving aesthetically and functionally enriched results on fabric surfaces. When combined with Anatolian motifs, the aim is to create three-dimensional surface effects on fabric surfaces.

In this context, the research question is: To examine to what extent the Shibori technique is effective in creating three-dimensional effects on textile surfaces.

The hypothesis is that when the shibori technique is applied by folding, bending, and squeezing the fabric, it creates visual and tactile depth in textiles, especially on cotton fabrics, by applying different colors and creating distinct three-dimensional surface textures.

## **Materials and Methods**

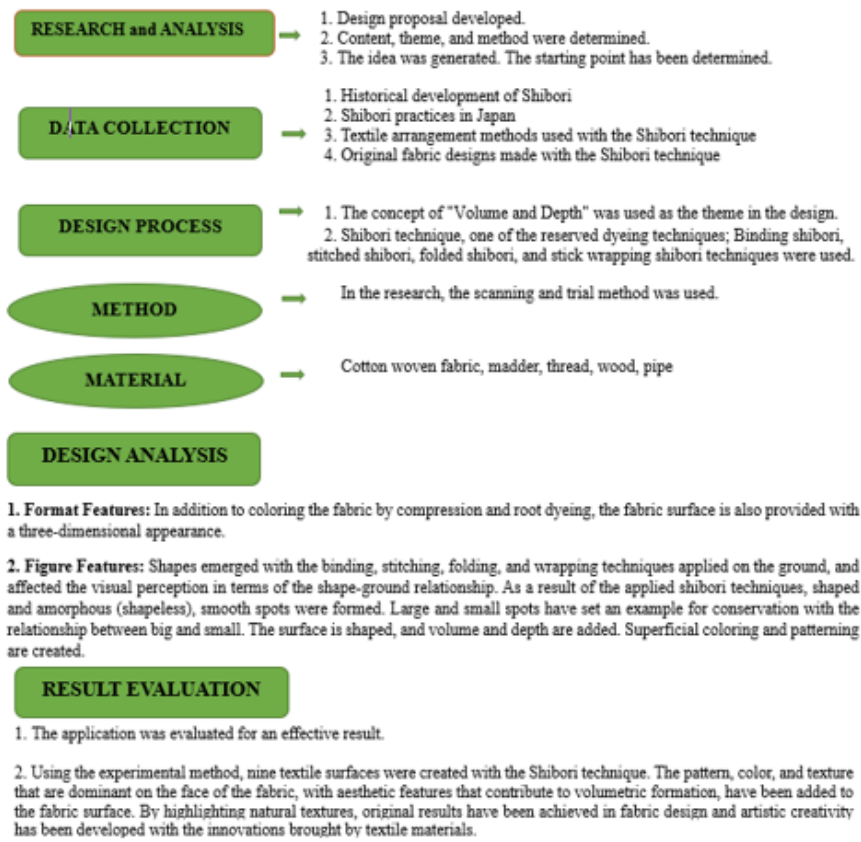
This study employed the traditional Shibori technique as the primary method. Patterns were created on cotton fabric surfaces using processes such as bending, stitching, folding, and compressing. These resist patterns were then developed through immersion dyeing.

100% cotton white fabric was used in Shibori applications. Fabric was washed, purified, and dried with natural olive oil soap and white vinegar. The fabric was shaped with various methods and then dipped in dye (5-10 min) to create unique patterns. Dyeing time, temperature, and environmental conditions are explained in detail in the application stages. The success of Shibori depends on the fabric used, the type of dye, the binding technique, and the dyeing process.

This research is an experimental study. Information supporting the research was obtained by scanning the literature on the subject. Shibori can be made in many colors as well as in a single color. The traditional dye used is indigo. In this study, fabrics were dyed using natural plant-based dyes in many colors. In this study, fabrics were dyed using colored root powder dyes. This technique was used to increase the aesthetic value of the fabric and to develop innovative approaches in design.

The effects of the different shibori techniques used on each fabric were observed. Color transitions and shape differences were observed in the experimental studies. Three-dimensionality was evaluated visually on fabric surfaces. Different patterns were formed on the fabric surface and a three-dimensional appearance was obtained.

# Design Methodology



## Historical Development of Shibori

The history of Shibori in Japan dates back to the 6th to the 8th century. It is estimated that it was believed to have been influenced by Chinese textile practices. Remains made with the shibori technique were found in wooden architecture of the Todaiji Temple. The oldest examples made with the resist dyeing technique, inherited from the former emperor Shomo, are still preserved today. Although the history of Shibori started in Japan, it is not an art that belongs only to the Japanese. It is practiced in China, India, Indonesia, the Americas, Malaysia, Korea, Europe, and Africa (Gunner, 2007: 11)

“Toshiko Itō” states in her work “Tsuji-gahana”, which means the flower of Japanese textiles, that the use of the reserve dyeing technique dates back to the Prehistoric period. It is estimated that the Japanese have known the technique of binding certain parts of fabrics to prevent dye penetration since those times. This idea is supported by Alfred Bühler, a Swiss anthropologist who has conducted an in-depth study on reserve dyeing. Bühler thinks that this technique is based on the early technological development of man, has a natural origin that this technique has found the

opportunity to develop in much more detail in places where it is suitable for development. Later, more advanced methods were developed through trade and other relationships between people (Kırmızı, 2005: 4).

Wada states that the tie-dye reserve technique is 'Yuhata' in Japanese. He states that textiles produced with the tie-dye method date back to the 3rd century AD, but that the widespread use of these textiles dates back to the 6th century AD. Especially during the Heian Period (794–1185) clothes produced with the shibori technique were worn by upper-class women. It was widely used by soldiers and middle-class people from the 10th century onwards, and especially silk shibori was taxed as a luxury item by the empire, and is recorded in historical records. Shibori has undergone cultural and aesthetic changes throughout the historical period. It is stated that textiles produced with the shibori technique were widely used in religious ceremonies in Buddhist temples between the 15th and 18th centuries. Textiles for religious purposes were made using many different techniques. Embroidery and stencil application techniques, reserved techniques, and painting with brush techniques were used (Wada, 2002: 37).

The development of Shibori art in Japan dates back to the 6th century. Although Shibori originated in China, it developed within Japanese culture. The fabrics, which were dyed using three different techniques, are works left by Emperor Shōmu. They were made with the "roketsu", "kōketsu", "kyōketsu". techniques. The word "kechi" means "reserve" in Chinese. For this reason, it is possible that the Shibori technique actually emerged in China. The techniques used in Japan and China are roketsu (wax reserve dyeing), kōketsu (binding), and kyōketsu (compression) (Yoshiko et al., 1983: 15). By the mid-1000s, when some of the warehouses of the Todai-ji temple suffered from deterioration, pieces of Buddhist rituals thought to have been used in the opening ceremony, where Emperor Shōmu stated that it existed to serve the Buddha, were moved to the undamaged southern façade of the Shōsōin building (Yoshiko et al., 1983: 136).

Dyeing, which is the process of coloring the textile materials, is thought to be as old as the history of weaving. Learning the methods of spinning yarn, the beginning of the act of weaving, and the use of color pigments obtained from nature coincide at the same time. Archaeological textiles show that in the first weaving samples, the yarns were undyed, and later woven fabrics or yarns were dyed with natural dyes. It is known that societies used reserve dyeing techniques in the adventure of dyeing textile surfaces (Ercivan, 2016: 88). With the increase in trade between China and Japan, cultural exchange developed with Japan's acceptance of Buddhism in the 7th and 8th centuries. China has become one of the culturally richest countries in the Far East, and Shibori is of Japanese origin, but developed under Chinese influence. Japanese missionaries sent to China examined the developments in many fields there and transferred some of them to their own country. This situation has increased the interaction between countries (Alptekin, 2020: 6).

Shibori Applications

Shibori application methods are categorized into five main groups, as listed below: stitched shibori, folded shibori, tied shibori, pole-wrapped shibori and mixed shibori.

In this study, four main Shibori techniques were applied: Stitching Shibori, Folding Shibori, Binding Shibori, and Pole-Wrapping Shibori. Each technique is characterized by distinct surface effects and dye-resist methods

Table 1. We can list 5 main groups of Shibori application methods.

| 1.Stitching Shibori | 2.Folding Shibori             | 3.Binding Shibori | 4.Pole Wrapping Shibori | 5.Mixed Shibori Techniques |
|---------------------|-------------------------------|-------------------|-------------------------|----------------------------|
| Ori-nui             | Itajime (folding and molding) | Kanoko Shibori    | Arashi Shibori          |                            |
| Mokume nui          | Cloth pleated and bound       | Kumo Shibori      |                         |                            |
| Karamatsu           | Cloth pleated and stitching   | Miura Shibori     |                         |                            |
| Tsujigahana         |                               |                   |                         |                            |

(Dilber Yildiz, 2025)

Stitching Shibori

This technique involves folding or freehand basting of the fabric to form patterns before dyeing. The stitches act as resist zones where dye penetration is limited. Subtypes include:

- Ori-nui: Simple running stitches along a folded edge.
- Mokume-nui: Parallel rows of running stitches that resemble wood grain.
- Karamatsu: Circular motifs resembling pine rings.
- Tsujigahana: A historical technique combining resist dyeing with hand painting and embroidery.

Folding Shibori

The fabric is accordion-folded into geometric shapes (squares, triangles, rectangles), placed between wooden blocks or sticks, and tightly bound with rope. This produces symmetrical, blurred-edge patterns after dyeing.

Sub-techniques:

- Itajime: Folding and pressing with clamps or boards.
- Pleated and Bound: Folded fabric is bound with string or rubber bands.
- Pleated and Stitched: Folded fabric is stitched before dyeing.

## Binding Shibori

This technique involves tightly binding small sections of the fabric by hand to form resist areas. After dyeing, these bindings are removed to reveal circular or linear patterns. Variants include:

-**Kanoko Shibori**: Similar to the Western “tie-dye” look.

-**Kumo Shibori**: Spiderweb-like pleats and bindings.

-**Miura Shibori**: Looping and hooking with a needle instead of knots.

## Pole Wrapping Shibori (Arashi)

The fabric is diagonally wrapped around a cylindrical object (usually a PVC or wooden pipe), then compressed and dyed. This produces diagonal linear patterns resembling rain, hence the name *Arashi* (“storm”).

## Mixed Shibori Techniques

In some applications, two or more Shibori techniques were combined to achieve more complex and multi-layered patterns

## Application Findings

As part of the surface preparation, 100% cotton white fabric was pre-washed using grated olive oil soap (half a bar per 2 meters of fabric) and 1 cup of white vinegar at 60°C to remove chemicals and soften the fibers. In the Folding Shibori applications, fabrics were folded in different styles—accordion, triangular, and rectangular—then tied and dyed. By compressing specific areas, geometric patterns such as squares and triangles were obtained. These applications produced rich, layered surfaces with distinct three-dimensionality.

## Folding Shibori

In the folded shibori technique, the fabric is folded in different ways and the dyeing process is done. The fabric is tied lengthwise, thin, and thick. The fabric is also folded in an accordion style and geometric shapes are obtained. The fabric is folded, tied, compressed in some parts, and dyed, thus giving the desired pattern to the fabric. It is a technique that produces geometric shapes such as triangles and squares by folding the fabric lengthwise in an accordion style. The Folded Shibori technique was used in the applications made in the article.



**Figure 1.** (Dilber Yildiz, Fabric Folding Work, 2023)

## Stitching Shibori

In the Shibori stitching technique, a pattern is drawn onto the fabric. The stitches are basted along the drawn lines. The stitches are made in straight, curved, and zigzag patterns. After the sewing process, the beginning and end are tightly tied. The threads are pulled and tightened and the dyeing is applied. The fabric is rinsed, after it dries, the threads are removed, the pattern is revealed, and rinsed in vinegar water to fix the dye and soften the texture. Creating a dynamic surface with raised, textured patterns.



Figure 2. (Dilber Yildiz, Fabric Sewing Work, 2023)

## Pipe Wrapping Technique in Shibori

In the wrapping technique, as implied by its name, the fabric is wrapped around the pipe. It is tightly wrapped and tied with ropes to prevent it from opening. The fabric is gathered in the middle of the tube and shrunk. During the dyeing process, the fabric can be dipped in and out of dye as it is, or it may be preferred to dye only certain areas of the fabric. After the dyeing process is completed, the fabric is kept on the stick until it dries. After it dries, it is removed from the stick by cutting the threads, creating a pattern on the fabric. The wrapping technique produces a striped pattern reminiscent of stormy rain. The Pipe Wrapping techniques were used in the applications in the article.



Figure 3. (Dilber Yildiz, Fabric Wrapping on Pipe, 2023)

## Binding Shibori

The binding technique has been applied in the art of shibori for centuries. The areas where patterns are expected must be well determined and wrapped. It is formed by pulling and wrapping the pattern on the fabric

from certain points. The materials used to create the pattern, such as stones, beans, chickpeas, marbles, screws, soda caps, affect the size and shape of the pattern to be made. These materials compress certain parts of the fabric and thus ensure that the compressed areas do not absorb dye during the dyeing process and reveal the pattern. As the locations and shapes of the knots and bindings we tie on the fabric change, different patterns will emerge. Strings are used to tie fabric. The tying technique produces a spider-like looped pattern. The pattern is generally circular, reticulated, and radiates from a center. The "spider" metaphor comes from its appearance of branching outward from the center. It is a technique that involves wrapping fabric around objects and tying them to create small rings.



**Figure 4.** Dilber Yildiz, Fabric Binding Work, 2023

**Shibori Dyeing Processes**

Fabric dyes are prepared in different colors. The selection of root powder dye is compatible with cotton fabrics in terms of both color saturation and absorbency. However, the fixing process of these dyes is critical in terms of color fastness. The dye, which penetrates the fabric during the dyeing process, adheres permanently to the fabric through the fixing process. Otherwise, the dye may bleed during the first wash. Colors will fade, and patterns will become indistinct. In this study, natural fixatives such as vinegar and salt were used.

The initial immersion time for dyeing was set between 5 to 10 minutes, allowing the fabric to absorb the dye adequately in unbound areas. Upon removal from the dye bath, the fabric was exposed to oxidation in open air for an additional 5 to 10 minutes, a critical step that contributes to the development of color intensity, especially when using natural dyes. Subsequent immersions in different color baths were conducted following this oxidation phase, depending on the desired multi-tonal surface effect. The dyeing process was carried out in warm water conditions at 30–40°C. To ensure optimal results, the process was performed in well-ventilated and shaded environments, avoiding direct sunlight which may cause uneven fading. It was also observed that high humidity levels in the environment prolonged drying time and could alter the final hue and saturation of the dyed fabric.



**Figure 5.** (Dilber Yildiz, Fabric Dyeing Work, 2023)

### **Drying Process of Shibori**

Drying stages are important to prevent colors from mixing. In multiple dyeing processes, the color order should be from light to dark.



**Figure 6.** (Dilber Yildiz, Fabric Drying Study, 2023)

### **The Re-tying Process of Shibori**

After the fabric is completely dried, the same dyeing procedures were repeated using new binding configurations to apply additional colors. This re-tying process enables the creation of multi-layered and complex patterns by preventing subsequent dye applications from reaching previously dyed or bound areas. Each re-binding introduces variation in form and color, contributing to the overall dimensional and aesthetic richness of the textile surface.



**Figure 7.** (Dilber Yildiz, Fabric Re-tying Work, 2023)

## Shibori Disassembly Process

After the dyeing process, the fabric was thoroughly rinsed under running water to remove any excess dye and ensure color stabilization. Once the washing stage was completed, the fabric was air-dried. Following the drying process, all knots and bindings were carefully removed to reveal the patterned surface. To enhance the dimensional structure and ensure the durability of the dye on the fabric, a surface fixation technique was applied using heat and pressure through ironing. This process contributes to the visual clarity, texture retention, and long-term color fastness of the textile surface.



**Figure 8.** (Dilber Yildiz, Fabric Dismantling Work, 2023)

## World-Famous Artists Using Shibori Technique

The historical origin of the Shibori technique is debated, with both Chinese and Japanese traditions claiming influence.

Shibori is widely featured in global art platforms. These works have also influenced textile and fashion designers, and shibori applications, a resist dyeing technique, have also found their way onto fabric surfaces. Japanese designers such as Issey Miyake and Reiko Sudo have created a three-dimensional appearance on fabric surfaces (Halaçeli, 2011: 33).

It lost its importance after Japan, which had a bad time during the Second World War, gave up some of its traditions and began to emulate the traditions of the Western world. Shibori, which started to receive the value it deserved again in the third quarter of the 1900s, was accepted as an important craft. Shibori, which is used by famous fashion designers around the world with different methods on different fabrics, continues to exist in workshops in many countries today (Gunner, 2007: 15-16). Some artists practice shibori, a fabric dyeing technique used in countries such as Africa, Nigeria, India, Indonesia, Yemen, Uzbekistan, and Russia, as well as in some parts of Europe, in different countries of the world. Artists of Japanese and Chinese origin; Kanezo Suziki, Karren Brito, Mascha Mioni, Sandy Wagner, Barbara Shapiro, Katy Dolk, , Mie Iwatsubo (Alptekin, 2020: 24). Shibori is also practiced in Far Eastern countries, the United States, and Middle Eastern countries; There are artists and their works who apply the Shibori technique in wearable art products. India Flint, Norihisa Miura, Kensuke Ogura, Pam Scheinman, Itchiku Kubota, Michelle Jonas, Karren K.Brito and Barbara Schey.

Mie Iwatsubo (Japan), Mascha Mioni (Switzerland), PockeTee (USA), Jay Rich (USA), Angelina DeAntonis, Lesley Nishigawara Ana Lisa Hedstrom Marian Clayden, H       Soubeyran, Genevi     Dion, Michelle Griffiths Elisa Joan McGee, Ligon Asha Sarabhai, Karen Urbanek (USA), Margaret Barnett, Judith content, Marie-Helene Guelton, Trine Mauritz-Eriksen, Jaon Morris, Michele Ratte Junco Sato Pollack, Inga Blix, Keiko Amenomori- Linda Lee Kerr Carter Smit Patricia Black (Australia), Karren K. Brito(USA), Barbara Shapiro, Katherine Westphal, Katy Dolk, Yoshiko Iwamoto Wada, Mary Kellogg Rice, Jurgen Lehl'ichi Arai, Emily DuBois, Candiss Cole (USA), Michael Davis (USA), Genevieve Dion (Canada/USA), Carter Smith (USA), Barbara Rogers (Australia), Barbara Schey (Australia) (Yildiz 2017: 16).

With the return to the homeland movement in America in the 1960s, the rise of shibori craft emerged and a revival against folk arts began. Shibori, a reserved dyeing technique originating from the Far East, has also influenced the world of artistic textile design (Hala    li, 2011: 33). Shibori, which started to attract international attention, became a craft in the early 1980s and its popularity was proven (Gunner, 2007: 15).

### **Adding Three Dimensions to the Fabric with the Shibori Technique**

The Shibori technique enables the transformation of fabric from a flat, two-dimensional surface into a three-dimensional form through methods such as folding, pleating, and crumpling (F            , 2015: 186). Through fabric manipulation and dyeing, Shibori techniques can yield three-dimensional pattern effects (Hala    li, 2011: 32). These techniques, which add three dimensions to the fabric, are made with materials such as achieved through the use of small objects-such as stones, marbles, or buttons-which act as resist points during dyeing. The main purpose of Shibori techniques is to shape the fabric from a two-dimensional surface to a three-dimensional surface by folding, rotating, and bending it. Washing and purifying the material with olive oil soap and white vinegar affected the permanence and appearance of three-dimensionality on the fabric surface. As the number of colors applied increases, excessive layering of colors can visually obscure the perceived depth and spatial distinction. Within the scope of this study, in addition to three-dimensional textures, patterns were created on the fabric surface. Patterns and a three-dimensional surface were created with the compression and reserve dyeing technique.

Shibori, one of the dyeing arts that enriches the aesthetic values of fabric-type materials, is a surface-oriented coloring and patterning techniques. Textile artists develop this shaping process. Forming and dyeing the fabric in different shapes with various binding techniques, untying the ties of the fabric, and revealing unique patterns cause three-dimensional features to emerge in the fabric. Textile artists develop this shaping process and create original designs using personal methods to create voluminous textile works.

## Original Fabric Designs Made with Shibori Technique

### Design 1

**Technical:** Stitching Shibori

**Size:** 2 m

**Colors used:** Purple, yellow, green, blue “Both cold and warm tones were employed to enrich the color harmony.”

The raw fabric was washed with olive oil soap and white vinegar. The traditional Anatolian motif "star" was drawn on the fabric. Stitching Shibori was applied directly onto the motif outlines. Basting is applied on the background. Following the stitching process, the fabric was dyed using natural root dyes. As a result of the basting process, star motifs, and formations are formed, producing star patterns that appeared in lighter shades than the surrounding compressed areas. The star motif, one of the rich cultural motifs of Anatolia, has been skillfully blended with modern Shibori techniques to create a unique three-dimensionality on textile surfaces. The resulting works bring together the fascinating texture of traditional Anatolian aesthetics and the unique touch of Shibori, thereby creating a dynamic textile surface characterized by tactile depth and visual movement.



**Figure 9.** (Dilber Yildiz, Fabric Design Work, 2023, Shibori Work, 2m/Tekirdag)

### Design 2

**Technical:** Stitching Shibori

**Size:** 2 m

**Colors used:** Purple, yellow, green “Both cold and warm tones were employed to enrich the color harmony.”

The raw fabric was washed with olive oil soap and white vinegar. The “six-dog-foot motif” used in traditional Tekirdağ Karacakılavuz twill weavings was drawn on the fabric. Stitched shibori was applied to the motifs. The motifs were basted and then pulled tight with cotton thread. Since the dye could not penetrate the knots, when the knots were dissolved, resulting in patterns formed by the contrast between dyed and resist-protected areas. There are light-colored patterns and stains compared to the ground. The application of Shibori techniques on three-dimensional surfaces by synthesizing the “abundance six-dog foot motif” from Anatolian motifs has enriched textile design both visually and symbolically. This creative approach brings a new perspective to textile design, while offers a novel visual and conceptual approach by bridging heritage with innovation.



**Figure 10.** (Dilber Yildiz, Fabric Design Work, 2023, Shibori Work, 2m/Tekirdag)

### **Design 3**

**Technical:** Binding Shibori

**Size:** 2 m

**Colors used:** Purple, yellow, green “Both cold and warm tones were employed to enrich the color harmony.”

The raw fabric was washed with olive oil soap and white vinegar. One of the oldest known Shibori techniques the Shibori binding technique, was applied to the fabric. Chickpeas were tied very tightly around the points that would form the design on the fabric with white cotton thread and the fabric was dyed with madder. Since the dye could not penetrate the knots, resulting in patterns where the dye was resisted by tight bindings in the dyed and undyed areas. As a result of compressing certain areas of the fabric, the dye did not get into the compressed areas during the dyeing process, allowing the pattern to emerge. Offered not only a visual but also a tactile aesthetic different patterns emerged. Circular color fluctuations and natural textures were obtained on the fabric. Three-dimensional and richly textured visual effects were obtained using the Shibori binding technique. This method was blended with a modern approach, creating a sense of depth and movement on the surfaces of the fabrics. The motifs that emerged by combining the natural texture of the cotton fabric with the vibrant and permanent colors of the powder dyes offered not only a visual but also a tactile aesthetic.



**Figure 11.** (Dilber Yildiz, Fabric Design Work, 2023, Shibori Work, 2m/Tekirdag)

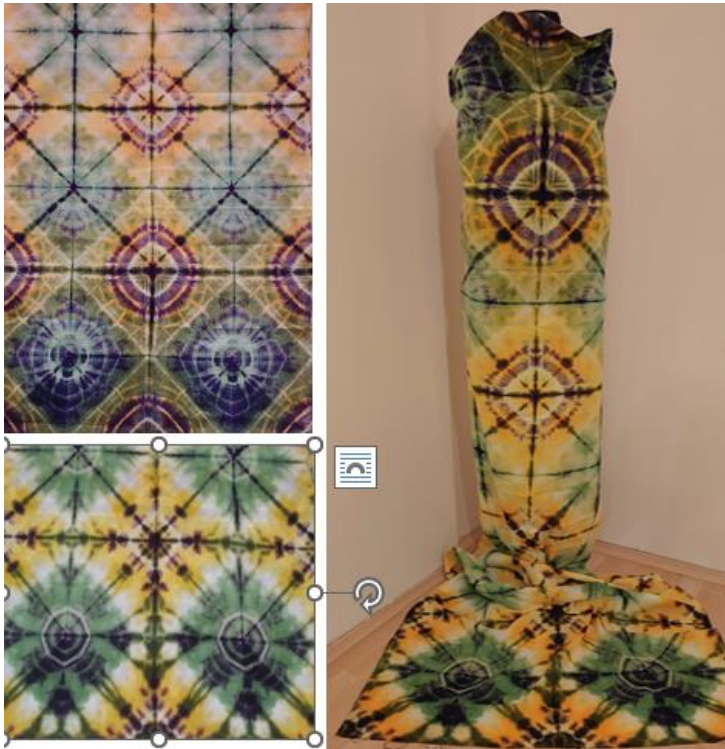
**Design 4**

**Technical:** Folding Shibori

**Size:** 2 m

**Colors used:** Purple, yellow, green, black “Both cold and warm tones were employed to enrich the color harmony.”

The raw fabric was washed with olive oil soap and white vinegar. Folding shibori technique was applied and the fabric was dyed with madder. The fabric was folded lengthwise in accordion style, triangularly folded with the help of an iron, and compressed and secured using cotton thread. The fabric is folded, tied, compressed in certain areas, and dyed, and the desired pattern is given to the fabric. Provided both aesthetic richness and a perceptual sense of dimensionality are formed compared to the ground. The lines of the design elements on the surface appear in different tones and thicknesses. Compared to the ground, dark patterns and linear stains were formed. The distribution of colors in the texture, different tone transitions, and the decrease in color intensity in places, brought the dynamism and organic structure of Shibori techniques to the fore. Not only an aesthetic richness was provided in the fabric, but also the surfaces gained a three-dimensional structure in terms of textural and perceptual aspects.



**Figure 12.** (Dilber Yildiz, Fabric Design Work, 2023, Shibori Work, 2m/Tekirdag)

## Design 5

**Technical:** Folding Shibori

**Size:** 2 m

**Colors used:** Yellow, brown, green “Both cold and warm tones were employed to enrich the color harmony.”

The raw fabric was washed with olive oil soap and white vinegar. The folding technique was applied to the shibori fabric, and the fabric was dyed with madder. The fabric was folded in an accordion style lengthwise, shaped into squares through ironing and tied with cotton thread by compressing it. The fabric was folded and tied, certain areas were compressed and the dyeing process was done, and resulting in structured, geometric surface designs. Dark and smooth linear patterns were formed according to the background. On the surface, the design elements of the line have emerged in different tones and thicknesses. Dark-colored patterns and linear spots have been formed according to the ground. With this method, three-dimensional effects were achieved on fabric surfaces, both texturally and visually, beyond traditional two-dimensional prints. The intervention of the Shibori technique into the structural form of the fabric allowed the colors to gain depth and the surface to take on a dynamic and lively appearance. In addition, the controlled use of powder paint created richness in color densities and transitions.



**Figure 13.** (Dilber Yildiz, Fabric Design Work, 2023, Shibori Work, 2m/Tekirdag)

### **Design 6**

**Technical:** Stitching Shibori

**Size:** 2 m

**Colors used:** Purple, yellow, green “Both cold and warm tones were employed to enrich the color harmony.”

The raw fabric was washed with olive oil soap and white vinegar. The “ram’s horn motif” used in traditional Tekirdağ Karacakılavuz twill weavings was drawn on the fabric. Basted shibori was applied to the motifs. The patterns were stitched and tightened with cotton thread and the fabric was dyed using root dye. Since the dye could not penetrate the knots, when the knots were untied, a “pattern” was obtained in the dyed and undyed areas. Curved and zigzag forms emerged on the surface of the fabric. The geometric, stylized, or symbolic structure of the ram’s horn motif from Anatolian motifs; created a striking contrast with the organic, fluid spotted forms of shibori. The integration of Shibori technique with these motifs and the fact that the motif appeared in its blurred and abstracted form also added a separate layer.



**Figure 14.** (Dilber Yildiz, Fabric Design Work, 2023, Shibori Work, 2m/Tekirdag)  
**Table 2 Fabric Structure, Material, Color Transition, and Three-Dimensionality Relationship**

|   | Fabric Knitting and Type    | Shibori Technique           | Color Transitivity                            | Fabric Image                                                                      | Color Effects | Three Dimensionality Degree |
|---|-----------------------------|-----------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------|---------------|-----------------------------|
| 1 | Cotton Plain Marbleshahi 2m | Stitching Patterned Shibori | Green<br>Yellow<br>Blue<br>Purple             |  | Middle        | Middle                      |
| 2 | Cotton Plain Marbleshahi 2m | Stitching Patterned Shibori | Purple<br>Yellow<br>Purple<br>Yellow<br>Green |  | Little        | Little                      |
| 3 | Cotton Plain Marbleshahi 2m | Binding Shibori             | Yellow<br>Purple<br>Green                     |  | High          | High                        |
| 4 | Cotton Plain Marbleshahi 2m | Folding Shibori             | Purple<br>Yellow<br>Green<br>Black            |  | High          | High                        |
| 5 | Cotton Plain Marbleshahi 2m | Stitching Patterned Shibori | Purple<br>Yellow<br>Green                     |  | High          | High                        |
| 6 | Cotton Plain Marbleshahi 2m | Square Folding Shibori      | Yellow<br>Brown<br>Green                      |  | High          | High                        |

(Dilber Yildiz, Fabric Design Work, 2024, Shibori Work)

### Discussion and Conclusion

The Shibori technique is a unique method for capturing three-dimensionality and creating visual depth on textile surfaces. In this study, the Shibori technique, a traditional Japanese fabric dyeing method, is synthesized with motifs reflecting the rich cultural heritage of Anatolia and addressed with an innovative approach.

The experimental applications conducted in this study were evaluated through visual analysis based on formal, chromatic, and textural criteria. Experimental applications were made in the article using different techniques of Shibori, a traditional Japanese fabric dyeing method. These techniques created three-dimensional and organic patterns by preventing the dye from adhering to certain parts of the fabric. The combination of Shibori, a technique of Japanese origin, with motifs specific to Anatolian culture created a contemporary interpretation that blends both Eastern and Western textile heritage.

The use of color and transitions in the applications, the harmony of the colors used, whether they create contrast, and whether the color transitions are soft or sharp were evaluated. The variety of patterns, forms, and techniques, as the variety and distinguishability of the patterns formed as a

result of the shibori techniques used such as folding, bending, binding, and sewing were examined. Regular and symmetrical formations reinforce depth perception and rhythm, whereas irregular patterns evoke a more organic and natural sensibility, enhancing the tactile experience. The three-dimensional effect; whether surface movements such as bulges, indentations, and protrusions on the fabric create a three-dimensional feeling was evaluated.

The use of different colors added visual variety to the work. Different color transitions were achieved with powder paints. The fabric was partially dipped into the paint, each time a little deeper to create a tonal difference. Patterned transitions were obtained by exposing the folds and binding areas to the paint at different rates. Complementary colors such as blue-orange, red-green, contrasting tones provided a more striking and contrasting appearance. Strong contrasts were created due to the pattern structure of shibori. The white areas formed in areas where the fabric did not absorb the paint with techniques such as folding, bending, and knotting created a sharp contrast with the painted areas.

Cotton fabric preference has been one of the most suitable fabric types for Shibori because it has high dye absorbency and good shape retention. Color transitions were clear and distinct. It preserved its form in processes such as folding, shrinking, wrapping. Applications were carried out using various Shibori techniques (folding, bending, stitching, etc.) on cotton fabric. The use of powder paint in different colors and various Shibori applications on cotton fabric has produced rich results in both textural and aesthetic terms.

The regular patterns formed in Shibori applications are repetitive and symmetrical structures and create a sense of depth and a perception of movement or relief. The lines resulting from the way the fabric is folded reinforce the texture and increase the three-dimensional effect. Irregular patterns are generally improvised and random formations. The transitions and fluctuations in color intensity create a soft three-dimensional effect, evoking natural landscapes. By making the surface appear wavy, the fabric in the patterns appears to be curling or twisting. Since irregularity is seen as a structure belonging to nature, a warm and natural three-dimensional perception is created.

The bulges, indentations, and contractions in the fabrics created a visible and tangible textural movement on the surface. These tactile features caused it to gain a three-dimensional appearance. The bulges and depressions created shadows as the light hit the surface from different angles, which increased the perception of depth. The puckers and folds created an organic structure in the fabric, making the surface appear mobile and lively rather than fixed. The Shibori technique has become an effective method for creating three-dimensional visual and tactile effects on textile surfaces.

The blending of Anatolian symbolic patterns with a three-dimensional surface effect ensures that the designs carry not only an aesthetic but also a cultural narrative power. In this respect, the study has created a unique example where traditional techniques are reworked with contemporary interpretations and provide added value to textile art. The reinterpretation of Anatolian motifs in design processes ensures that local cultural values are kept alive in a current and universal language. In addition, this study has also contributed to cultural sustainability. The combination of Shibori and Anatolian motifs has served to revive and preserve traditional arts that have been forgotten. When the Shibori technique is synthesized with traditional Anatolian motifs, it has been effective in creating a three-dimensional aesthetic and cultural expression on textile surfaces.

Three-dimensional textile surfaces obtained with shibori techniques not only create color and texture on the fabric; they have also become a living art form that brings together the past and the future, tradition and innovation, and manual labor and technology. This method has created a sustainable and soulful aesthetic that is far from the artificiality of fashion by adding the warmth of the human touch to textile design. When evaluated from a technical and visual perspective, it can be said that the works remain both loyal to the traditional Shibori understanding and include contemporary interpretations. Beyond adding a new dimension to textile design, these findings also constitute an important example in terms of the meeting of cultural heritage with modern design techniques.

Based on the findings obtained throughout this study, the following conclusions can be drawn:

These findings open new horizons in terms of originality and functionality in textile design. Three-dimensional surface textures are not only an aesthetic innovation; they have also expanded the creativity area of designers by enriching the tactile and wearing experience of garments. Different technical combinations of Shibori have allowed for unique products, thus exhibiting an original stance against the monotony of mass production.

In the field of textile education, the practical application of shibori techniques allows students to establish a connection with traditional handicrafts and prepares the ground for developing experimental designs blended with modern textile technologies.

Shibori, as a technique with historical and cultural depth, is an important heritage that should be kept alive in the modern textile world. In this study, the blending of traditional techniques with contemporary design understanding served the sustainability of cultural identity. At the same time, the preservation of local handicrafts ensured the continuity of cultural diversity and richness. This experimental study shows how creative and original designs can be created when traditional techniques are combined

with modern materials. It has been an inspiring source for designers who want to create a sense of depth and movement in fabric surface design.

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