

SUSTAINABLE FASHION DESIGN: APPLICATION OF SURABAYA BATIK WITH JALESVEVA JAYAMAHE THEME AND TUCKING TECHNIQUE IN READY-TO-WEAR FASHION

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ABSTRACT

Keywords:

Batik, Jalesveva
Jayamahe, Ready to
wear, Tucking

This study aims to create ready-to-wear clothing that combines modern and traditional elements through the application of Jalesveva Jayamahe batik motifs, fabric manipulating techniques (tucking), and lurik fabric. The method employed is the Double Diamond Model, consisting of four stages: Discover, Define, Develop, and Deliver. These stages involve idea exploration, moodboard creation, design development, and product realization.

The study resulted in five ready-to-wear clothing designs using a combination of materials such as toyobo fabric, linen, denim, and Jalesveva Jayamahe batik. The selection of yellow, navy, black, and denim colors provides an elegant visual harmony, while lurik fabric adds a traditional touch. The fabric manipulation technique offers unique dimensions to the clothing, while the Jalesveva Jayamahe batik motif conveys philosophical values of courage and Indonesia's maritime glory.

This collection integrates modern aesthetics with cultural heritage, creating products that are comfortable, versatile, and suitable for various occasions. The study demonstrates that traditional cultural elements can be creatively incorporated into the modern fashion world to produce works of aesthetic and meaningful value.

INTRODUCTION

In the fashion world, the industry has made significant advancements in clothing production, one of which is ready-to-wear fashion. Ready-to-wear garments prioritize comfort and ease of use, and are designed for both casual and formal occasions. These outfits typically feature simple designs, making the patterns used relatively uncomplicated (Nurfirdausiah & Katiah, 2020). Ready-to-wear fashion is designed for mass production using affordable materials and competitive prices (Laksana & Nursari, 2021).

Batik is a rich and valuable part of Indonesia's cultural heritage. One of the most captivating aspects of batik is its diverse and unique motifs, which reflect local culture, traditions, and historical significance. Batik has also become a symbol of national identity, and with UNESCO's recognition of it as an intangible cultural heritage, it has gained greater international attention and appreciation. The process of making batik, known as mbatik, involves applying wax droplets onto fabric. In Javanese, this is referred to as naritik or nritik, meaning to decorate a piece of cloth with lines and dots (Jasper & Pirngadi, 1980).

Etymologically, the word batik originates from the Javanese words amba, meaning "a wide cloth," and titik, meaning "dot," or matik, a verb meaning "to make dots." These

terms evolved into the word batik, which refers to connecting dots on a large piece of fabric to create a specific design. Batik refers to all things related to drawing patterns with dots on mori cloth (Mumu & Aninam, 2018).

Batik is a representation of cultural identity, which is why each region in Indonesia has its own distinctive patterns – including Surabaya. Surabaya is the capital city of East Java Province and is known as the "City of Heroes." The first known Surabaya batik is Batik Dewi Saraswati, developed by Mrs. Putu Sulistiani Prabowo. Some of its notable motifs include the Sawunggaling motif, the Semanggi motif, and the Suro and Boyo motif. Another well-known type of Surabaya batik is Mangrove Batik (Kurniawati, 2015).

The Jalesveva Jayamahe batik motif is a design inspired by the motto of the Indonesian Navy (Tentara Nasional Indonesia Angkatan Laut), which means "In the Sea We Are Glorious." This motif reflects Indonesia's maritime spirit and nationalism, particularly the Navy's role in safeguarding maritime sovereignty (Islam, 2015). The Jalesveva Jayamahe Monument plays a vital role as a powerful symbol that beautifully represents and honors Indonesia's maritime history in Surabaya. The structure stands as a symbol of maritime glory and the bravery of the Indonesian Navy (Evelynasari, 2023).

Tucks are sewn folds along fabric that add texture to garments without adding bulk. These folds can be stitched in various directions to create a three-dimensional appearance. There are many types of tucks, including standard tucks, curved tucks, contour tucks, shell tucks, diagonal tucks, cross tucks, honeycomb tucks, box tucks, and more (Qurashi, 2021). In this study, the type of tuck used is the box tuck. Box tucks are symmetrical fabric folds where both sides are evenly sewn, forming a box-like or rectangular pattern. This technique produces an orderly texture and gives a neat, formal appearance. Tucking comes in various forms, ranging from straight folds to patterned ones, with widths varying from about 3 cm to as small as 0.3 cm (Killi, F.R., 2025).

The aim of this study is to explore the process and final result of applying the Jalesveva Jayamahe batik motif and tuck manipulation to ready-to-wear fashion.

RESEARCH METHOD

The method used in the process of creating ready-to-wear garments with the application of the Jalesveva Jayamahe batik motif and tuck manipulation is the Double Diamond Model. The Double Diamond design model has been recognized as one of the most effective and reliable design process approaches since it was first introduced by the British Design Council in 2005 (Zhang, 2019). The Double Diamond model was officially launched by the Design Council in 2004 (Saad, 2020). According to Banbury (2021), the Double Diamond model aims to improve the management and planning of an effective design process through a standardized methodology by dividing the design process into four phases: Discover, Define, Develop, and Deliver. Hartana, A. P. (2024), used the Double Diamond model method to design and evaluate a web-based logistics management system. Zhang (2019) stated that the model is used to ensure user-centered solutions that are technically feasible and economically practical.

The Double Diamond model process consists of four stages, as follows:

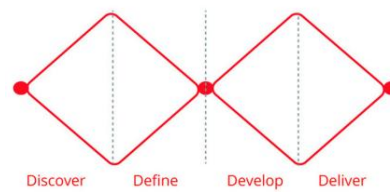


Figure 1. Double Diamond Model
(Source: Banbury, 2021)

Discover

The first stage in the Double Diamond method is called Discover, which involves gathering as many ideas and as much information as possible as a foundation for designing a product. In this stage, the researcher collects various references to gain a deeper understanding of the chosen theme. Based on the title of the study, “The Application of Surabaya Batik with the Jalesveva Jayamahe Theme and Tucking in Ready-to-Wear Fashion,” the researcher began by studying ready-to-wear garments, focusing on their form and appearance. The researcher also explored fabric manipulation techniques, particularly tucking, to understand how these techniques can create interesting shapes and textures in fashion design. The theme Jalesveva Jayamahe was used as the primary source of inspiration.

All of this information serves as the foundation for creating a fashion design that is both unique and meaningful. Additionally, the researcher collected images and references from the fields of art, fashion, and design to support the design process. With all this data, the researcher was well-prepared to move on to the next stage of the design process.

Define

This stage involves defining the core sources of ideas that were explored during the Discover phase. The researcher began to gather images related to the main themes of the study, which are Jalesveva Jayamahe and Tucking. These collected images were then organized into a moodboard.

A moodboard is a visual presentation of inspirational sources that displays design ideas, styles, and materials to be implemented in the development of a fashion collection (Nur’ Afifah, 2021). In the moodboard, the researcher also provided guidance regarding the planned color palette to be used.



Figure 2. Moodboard

Develop

The next stage is Develop. This phase involves the development, testing, review, and refinement of design ideas. Activities in this stage include prototyping or creating the fashion design. The ready-to-wear garments were digitally designed based on the moodboard, resulting in five design developments, each with different applications of the Jalesveva Jayamahe batik motif and fabric manipulation. The purpose of this variation is to refine the final product and create diverse designs suitable for ready-to-wear fashion.



Figure 3. Design

Deliver

The final stage, Deliver, focuses on the realization and evaluation of the proposed solution. In this project, this stage includes the final garment production process, evaluation of the realized design, and design improvements based on feedback or input received.

RESULTS AND DISCUSSION

Jalesveva Jayamahe batik is inspired by the motto of the Indonesian Navy (Tentara Nasional Indonesia Angkatan Laut), which means "In the Sea We Are Glorious." This motif reflects Indonesia's maritime spirit and nationalism, especially highlighting the Navy's role in safeguarding the nation's maritime sovereignty (Islam, 2015). The Jalesveva Jayamahe Monument holds great significance as a symbol that beautifully

illustrates and honors Indonesia's maritime history in Surabaya. This monument stands as a representation of the Indonesian Navy's maritime glory and bravery (Evelynasari, 2023).



Figure 4. Jalesveva Jayamahe Batik Pattern 1

The first batik design, titled "Sailing Toward Glory," presents a depiction of Indonesia's maritime greatness by illustrating ships sailing across the ocean. The main motif in this batik design is the ship, supported by wave patterns and isen-isen (filler motifs) in the form of stars. This motif carries a message about ships crossing the sea. The courage to move forward and explore the vast ocean symbolizes the crucial first step toward achieving greatness. The stars, offering light and direction, act as guides that lead the ships toward a shining destination (Evelynasari, 2023).



Figure 5. Batik Jalesveva Jayamahe Pattern 2

Meanwhile, the second design highlights the majestic Jalesveva Jayamahe Monument and the blue ocean waves. The main motif in this batik pattern is the Jalesveva Jayamahe Monument, with supporting motifs of ocean waves and isen-isen also in the form of wave patterns. This design carries a message about the grandeur and maritime glory of Indonesia, proudly soaring over the vast seas. The Jalesveva Jayamahe Monument serves as a symbol that reminds us of the magnificence of Indonesia's maritime history and teaches us to honor and preserve our cultural heritage with pride (Evelynasari, 2023).



Figure 6. Batik Jalesveva Jayamahe Pattern 3

The third design, titled "Symphony of the Sea," features a batik motif with ships as the main element, supported by gongs and isen-isen in the form of ocean waves. The message conveyed by this motif is that the vastness of the sea and its waves remind us that life is an adventure filled with challenges. The motif combines ships, ocean waves, and gongs to represent the strength and steadfastness of Indonesia's maritime warriors. The gong, with its deep and resonant sound, symbolizes the spirit and courage of the Indonesian Navy (Evelynasari, 2023).

The fabric manipulation technique used in this design is tucking, which adds texture and dimension to the garment. Tucking creates a clean, structured visual effect that enhances the character and depth of the fabric surface. This technique is applied to the Jalesveva Jayamahe batik motif to introduce a contemporary touch without diminishing the traditional values embodied in the design. The result is a garment that is not only aesthetically pleasing but also rich in expressive and symbolic meaning. The structured pleats created by tucking add a dynamic impression and enrich the visual details, bringing the batik to life. To clearly communicate the design during the production stage, technical drawings were used as a visual representation tool. These drawings illustrate the direction of the tucks, the pattern cuts, and the precise placement of the motifs. Below are the technical drawings for all five designs.

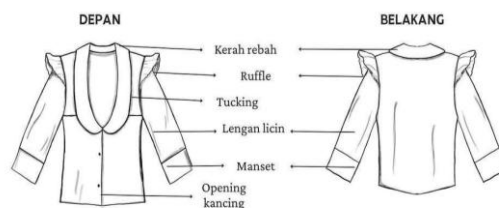


Figure 7. Technical Drawing Design 1

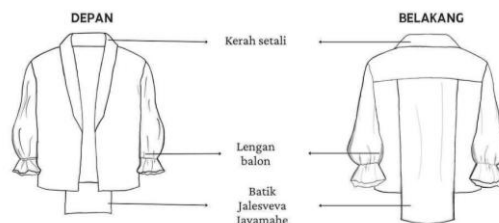


Figure 8. Technical Drawing Design 2

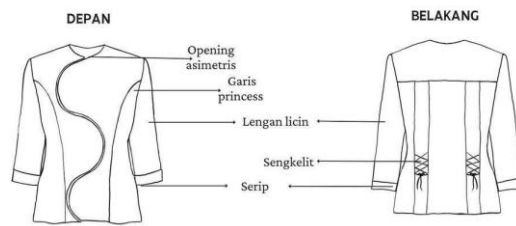


Figure 9. Technical Drawing Design 3



Figure 10. Technical Drawing Design 4

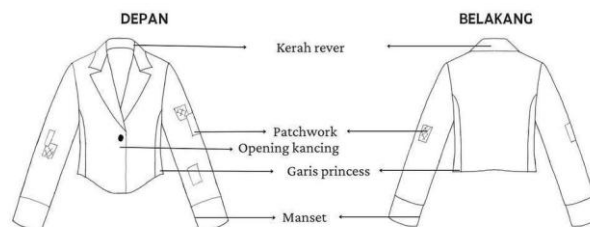


Figure 11. Technical Drawing Design 5

The next stage is the realization of the ready-to-wear garments, incorporating the Jalesveva Jayamahe batik motif and tuck manipulation techniques. The process of sewing the tucking manipulation begins by using a ruler and tailor's chalk to mark the lines where the folds will be made, ensuring all lines are symmetrical to create a neat pattern. The fabric is then folded along the marked lines (or a twin needle can be used to simplify the process), and the folds are stitched with small, tight stitches to ensure durability.

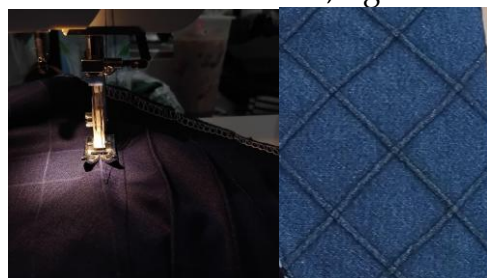


Figure 12. Manipulating Tucking

The garment pattern was created using construction techniques. According to Muliawan (2015:1), construction patterns are made based on the individual's body measurements and are drawn using mathematical calculations in accordance with the chosen pattern system. For these garments, the main fabrics used are Toyobo, linen, and denim, which

are combined with batik fabric featuring the Jalesveva Jayamahe motif. In some pieces, lurik fabric is also applied in certain areas. The choice of these fabrics supports the comfort and wearability of the ready-to-wear garments.

The final collection consists of five ready-to-wear outfits applying the Jalesveva Jayamahe batik motif and tuck manipulation. In the first design, the plain fabric used to complement the batik is navy blue Toyobo fabric. The collar used is a flat collar, while the sleeves are set-in sleeves with cuffs. The tuck manipulation is applied to the front shoulder area and cuffs. The opening technique used in this design is a fabric-covered button closure.



Figure 13. Final Result of Ready-to-Wear Garment Design 1

The second design uses mustard yellow linen fabric combined with batik. The sleeves are balloon-style with elastic at the bottom, and the collar is a set-in collar. Tucking manipulation is applied to the sleeves and collar. Batik is placed on the center back panel, with no buttons or zippers on the front.



Figure 14. Final Result of Ready to Wear Design 2

This outfit uses plain black fabric, traditional lurik, and Jalesveva Jayamahe batik as decorative accents. Plain set-in sleeves without gathers, with lurik trim at the sleeve ends. Lurik is also used as a panel accent on the front, while Jalesveva Jayamahe batik is applied on the front and back. The back features sengkeli for comfort and a dynamic silhouette. This design blends traditional and contemporary elements, suitable for formal or semi-formal events with cultural or nationalistic themes.



Figure 15. Final Result of Ready to Wear Design 3

The fourth design is a vest made from plain denim fabric with tucking technique for a modern texture. The front panel is adorned with patchwork of lurik fabric and Jalesveva Jayamahe batik, while the back features a decorative bow made of batik. Ruffles along the bottom edges add a dynamic touch. This vest blends traditional and modern elements, suitable for semi-formal or casual events with an ethnic-modern theme.



Figure 16. Final Result of Ready to Wear Design 4

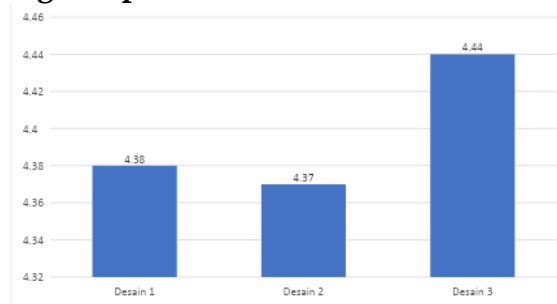
The fifth design uses plain denim fabric with an elegant cut and a reverse collar enhanced by tucking. The simple set-in sleeves have tucking cuffs, with Jalesveva Jayamahe batik applied to the front and back for a visual focal point. The sides use plain denim, creating a modern look. The sleeves feature patchwork accents combining tucking and batik. Fabric-covered buttons add a formal touch. This design blends modern denim with traditional batik, suitable for formal or semi-formal events with a contemporary ethnic theme.



Figure 17. Final Result of Ready to Wear Design 5

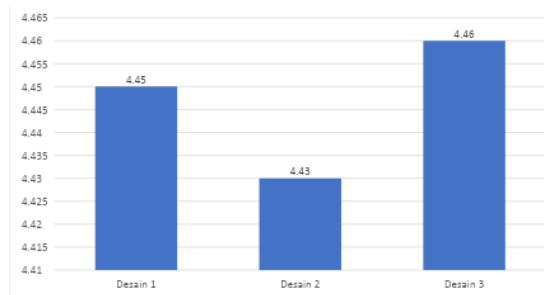
The fashion designs combine yellow, navy, black, and denim, along with fabric manipulation techniques, lurik fabric, and Jalesveva Jayamahe batik. Yellow adds brightness, navy offers elegance, black serves as a neutral base, and denim gives a modern feel. Fabric manipulation adds a contemporary touch, while lurik fabric provides traditional value and the batik conveys a message of maritime courage. This mix of colors, textures, and patterns results in designs that are both aesthetically pleasing and meaningful. The final five designs were evaluated using a questionnaire, with data collected from students familiar with batik and ready-to-wear fashion.

Table 1.1. Aesthetic and Design Aspects



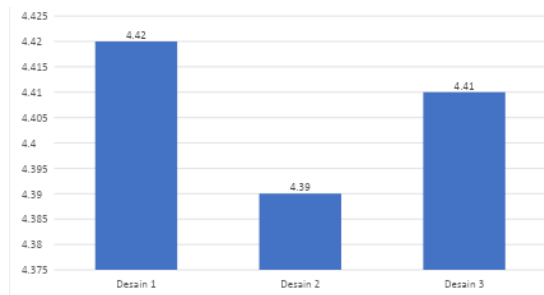
The data obtained from Graph 1, viewed from the Aesthetic and Design Aspects, shows that Design 1 received a mean score of 4.38 (very good). Design 2 received a mean score of 4.37 (very good), while Design 3 achieved a mean score of 4.44 (very good).

Table 1.2. Quality and Construction



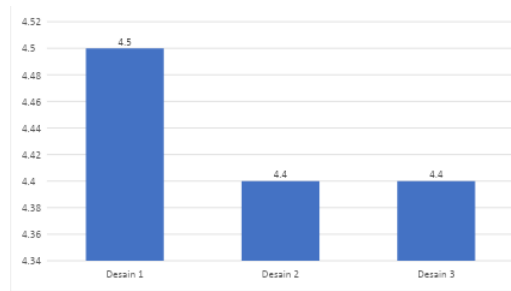
The data obtained from Graph 2, based on the Quality and Construction aspects, shows that Design 1 received a mean score of 4.45 (very good). Design 2 received a mean score of 4.43 (very good), while Design 3 achieved a mean score of 4.45 (very good).

Table 1.3. Overall Satisfaction



The data obtained from Graph 3, based on the Overall Satisfaction aspect, shows that Design 1 received a mean score of 4.42 (very good). Design 2 received a mean score of 4.39 (very good), while Design 3 achieved a mean score of 4.41 (very good).

Table 1.4. Overall Final Result



The data obtained from Graph 4, based on the Overall Final Result aspect, shows that Design 1 received a mean score of 4.45 (very good). Design 2 received a mean score of 4.40 (very good), while Design 3 achieved a mean score of 4.40 (very good).

CONCLUSION

In conclusion, the creation of the ready-to-wear collection, combining modern and traditional elements through the Jalesveva Jayamahe batik motif, tucking technique, and lurik fabric, resulted in garments that are aesthetically pleasing, comfortable, and meaningful. The color palette and fabric choices enhance the designs' versatility, while the batik motif conveys a message of Indonesian maritime courage. Using the Double Diamond method, the design process produced five garments blending traditional and modern styles, demonstrating how cultural heritage can be integrated into contemporary fashion with both aesthetic and cultural value.

IMPLICATIONS

The study shows that integrating Indonesian cultural elements, such as the Jalesveva Jayamahe batik motif and tucking technique, enhances contemporary fashion by adding philosophical depth. This research implies that cultural elements in ready-to-wear fashion not only improve aesthetics but also strengthen cultural identity, supporting sustainability and local wisdom in global fashion. It highlights the significance of material experimentation and fabric manipulation in creating functional yet artistic garments rooted in tradition. This study lays a foundation for further exploration in fashion design, promoting the incorporation of cultural values into modern fashion, contributing positively to industry innovation.

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