



Applying the Sashiko Technique to Classic Elegant Womenswear Inspired by Gedong Songo Temple

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ABSTRACT - This study aimed to develop an innovative fashion design by integrating the cultural heritage of Semarang Regency, Indonesia, with a traditional Japanese decorative technique. Specifically, the study explored the application of the sashiko technique to classic elegant womenswear inspired by Gedong Songo Temple. The research employed a Research and Development (R&D) method to design, produce, and evaluate the clothing product. The findings showed that the application of the sashiko technique resulted in a distinctive and visually appealing fashion product. The garment was designed as a convertible outfit that can be styled in three different looks, which enhances its aesthetic and functional value. Its main uniqueness lies in the harmonious cultural contrast created through the integration of local Indonesian heritage and Japanese textile ornamentation. The architectural elements of Gedong Songo Temple were successfully transformed into dynamic textile motifs through the use of the hitomezashi sashiko pattern. Expert validation indicated that the product achieved an average score of above 4.0, which categorized it as highly feasible for use. The study concludes that the sashiko technique functions not only as a decorative element but also as a means of enhancing the aesthetic value, exclusivity, and cultural significance of fashion products rooted in local wisdom. This design may also serve as a source of inspiration for future fashion innovation.

Keywords: Sashiko technique, classic elegant womenswear, Gedong Songo Temple.

INTRODUCTION

In the era of Industry 5.0, the fashion industry is undergoing rapid transformation. Current developments in fashion no longer focus solely on visually appealing creations, but also on works that embody cultural values and provide garments with a distinctive identity. Budiyanto and Ramadhani (2024) argued that future fashion development will no longer be limited to clothing and accessories such as necklaces and bracelets, but will also include functional items integrated with sophisticated and unique design elements that enhance the wearer's appearance. In addition, fashion trends continue to evolve under the influence of economic, social, and technological developments (Sakinah, 2022). In this context, creating clothing that incorporates local cultural potential can generate aesthetically valuable products, both as a form of creative innovation and as a means of preserving and appreciating Indonesian cultural heritage.

One decorative technique with strong aesthetic potential is sashiko, a traditional Japanese textile embellishment technique that can be applied to clothing as an ornamental element. Dewi (2022) explained that sashiko is a technique for applying motifs to garments using running stitches. Initially, sashiko was used primarily to reinforce seams, but over time it evolved into a decorative technique as well. Similarly, Al Syifa and Suliyanthini (2021) noted that sashiko is one of the oldest embroidery techniques in Japan, originally employed to strengthen fabric. Through the application of sashiko, plain textiles can be transformed into garments with high aesthetic value and distinctive visual character. Historically, sashiko was widely used during the Edo period to repair fabric and provide additional warmth in times

of poverty (Saraswati, 2024). Beyond its practical origins, sashiko has developed into a decorative art form rich in philosophy and beauty. Yamada (2021) stated that sashiko was deeply rooted in the lives of lower-class Japanese communities, such as farmers and fishermen, for whom sewing symbolized prayer, safety, and well-being. Furthermore, Chen and Wang (2023) emphasized that the rhythm and repetition in sashiko stitching not only create visual aesthetic value but also provide tactile texture, adding depth and dimension to the fabric surface.

In womenswear design, sashiko can produce a graceful and soft visual effect, making it suitable for classic elegant fashion. Classic elegant style emphasizes simplicity, balance, high-quality construction, and a neutral color palette, such as black, beige, gray, and white. According to Agustina (2025), classic elegant style refers to a simple, refined, and minimally experimental mode of dress that places strong emphasis on quality and perfection. Likewise, Gamaya (2021) described this style as being characterized by neutral and unobtrusive colors, neat tailoring, consistent materials, and minimal accessories. The application of sashiko to classic elegant womenswear therefore presents an interesting design challenge, since the unique geometric patterns of sashiko must be carefully arranged so that they blend harmoniously with the restrained and polished nature of this style.

As a source of inspiration, Gedong Songo Temple in Semarang Regency offers rich visual and cultural potential. The diversity of Indonesia's cultural heritage, including the historical and architectural value of Gedong Songo Temple, provides a distinctive attraction for both local and international audiences. Purnamasari (2024) emphasized the importance of promoting local cultural heritage through popular media such as fashion, not only as a form of appreciation but also as a means of public education about national history. Gedong Songo Temple possesses high architectural and symbolic value, and its ornaments, reliefs, and geometric patterns have strong potential to be transformed into decorative motifs for fashion design. Rahayu (2021) added that the ornaments of Gedong Songo Temple reflect principles of local wisdom in the processing of form and space. Therefore, the use of this temple as a design reference, when combined with a traditional Japanese decorative technique, creates a unique artistic form with substantial cultural value.

The application of sashiko as a fashion decoration technique inspired by Gedong Songo Temple represents an effort to establish a new identity for local fashion with international resonance by preserving cultural heritage through artistic creation. This work combines two different cultural traditions into a single fashion product, making it both an act of local heritage preservation and a medium for introducing Japanese decorative techniques. Moreover, the use of sashiko in fashion design through the modification of previously unused garments is consistent with the concept of sustainable fashion, which emphasizes process sustainability and unique product value. Sayyida (2022) explained that sustainable fashion prioritizes environmental and humanitarian values and encourages the use of eco-friendly products with better quality and durability in order to reduce excessive consumption and textile waste.

In addition to its cultural and decorative dimensions, this study also introduces a transformable clothing concept in which the garment can be styled into three different looks. This concept is expected to contribute to the development of Indonesian fashion by enhancing both functionality and wearability. Rosovai (2024) noted that transformable clothing can increase wear rate and delay disposal, thereby extending the life cycle of garments through continuous transformation. Similarly, Kusumastuti (2025) stated that transformable clothing is designed to increase utility, allowing a single garment to serve multiple appearances and functions. In this way, one clothing item can accommodate several styles, potentially reducing the frequency of new purchases and minimizing resulting waste.

Based on this background, this study aims to develop classic elegant womenswear through the application of the sashiko technique, using Gedong Songo Temple as the source of inspiration. This design approach highlights the integration of local cultural heritage, Japanese textile decoration, and transformable fashion concepts within a single product. It is expected that this study will contribute to the development of contemporary Indonesian fashion by demonstrating how traditional techniques and cultural sources can be transformed into innovative, aesthetic, and sustainable fashion products.

METHOD

This study employed a Research and Development (R&D) approach to develop and evaluate a fashion product. R&D is a systematic method used to produce a specific product and test its feasibility and effectiveness through structured stages, including problem identification, planning, data collection, analysis, product development, and evaluation (Sugiyono, 2022). In this study, the R&D approach was used to develop classic elegant womenswear applying the sashiko technique with design inspiration derived from Gedong Songo Temple.

This research was classified as Level 3 R&D, which focuses on examining and testing an existing product through a development process. However, not all stages of Sugiyono's R&D model were applied. The study adopted only the stages relevant to the research objectives, namely: potential and problems, data collection, product design, design and product validation, limited product trials, usage trials, and final product development.

The potential and problems stage was conducted through an exploration of books, journals, online sources, and other relevant references to identify issues and opportunities related to the study. Data collection was then carried out to obtain supporting theoretical and practical information related to sashiko, classic elegant fashion style, cultural inspiration, and transformable clothing. In the product design stage, the initial design of the garment was developed in the form of sketches and visual design plans.

The design validation stage involved one expert, Mrs. Lyna Windiarti, owner of Double Eight Craft, who evaluated the appropriateness of the design concept. The design validation result showed an average score of above 4.0, indicating that the design was feasible. Product validation was conducted by two experts, namely Mrs. Retno Wijayanti, S.Pd., a Fashion Design and Production teacher, and Mrs. Agustrin Ngahu, owner of Agustin Fashion. The average product validation score was also above 4.0, indicating that the product was feasible and suitable for use.

Furthermore, limited product trials were conducted to assess the practicality and initial effectiveness of the developed product, followed by usage trials to examine its overall feasibility. The final output of this study was a finished fashion product integrating the sashiko technique, inspiration from Gedong Songo Temple, and a transformable three-look concept. However, this study was limited to the final product stage and did not proceed to mass production. Therefore, the findings are confined to product development and feasibility assessment rather than large-scale implementation.

RESULTS AND DISCUSSION

Product Concept and Design Development

Sashiko is a traditional Japanese embroidery technique that was widely used during the Edo period to repair fabric and provide additional warmth in times of poverty (Prameswari et al., 2024). Originating from rural Japanese communities, sashiko developed not only as a practical stitching method but also as a textile tradition rich in patience, craftsmanship, and symbolic meaning. Pickett (2024) reported that for women in Otsuchi City, Iwate Prefecture, Japan, sashiko embroidery also became a meaningful activity for mental health recovery after the earthquake. Likewise, Moonshot noted that the repetitive simplicity of sashiko embroidery may help clear the mind. In the present study, the sashiko technique was applied to classic elegant womenswear in order to elevate the cultural heritage of Semarang Regency through the integration of local inspiration and Japanese decorative craftsmanship.

The developed fashion product was designed as transformable clothing that can be styled into three different looks. The outfit consists of a skirt with woven variations, a blouse with balloon sleeves, and an outer garment that can be worn in two different ways. The materials used were cotton fabric combined with denim sweding fabric. The outer garment was constructed from patchwork arrangements and then decorated with sashiko embroidery. Two principal sashiko motifs were applied, namely floral motifs and the silhouette of Gedong Songo Temple. This design direction was intended to produce an innovative fashion product by combining the local cultural identity of Semarang Regency with a traditional decorative technique from Japan.

Gedong Songo Temple possesses distinctive architectural features, including strong vertical lines and repetitive floral reliefs. In this study, the temple's visual elements were translated into sashiko-based decorative motifs. The vertical lines of the temple were simplified into a *hitomezashi* pattern, while the overall visual language of the temple was maintained through an earth-tone palette consisting of brown, cream, black, gray, and terracotta to preserve a classic elegant impression. The sashiko stitching was manually applied to the fabric after the geometric temple-inspired pattern had been transferred onto the material. The use of contrasting cotton thread produced a raised texture that added dimension to the fabric surface. This repetition of sashiko patterns also reflected the regularity and rhythm of the temple architecture. The main uniqueness of the design lies in the contrast of textures, where the monumental and solid character of the temple is translated into delicate, voluminous hand stitching. The use of off-white sashiko thread on dark fabric creates a visual effect resembling the silhouette of the temple in morning mist, producing what may be described as an ethereal yet grounded impression.

The conceptual development of the product was first represented through a moodboard. As shown in **FIGURE 1**, the moodboard served as a visual reference that communicated the concept, atmosphere, color direction, and cultural

inspiration of the design. The moodboard was inspired by Gedong Songo Temple, particularly its visual identity and sunset nuances, which informed both the decorative sashiko motifs and the silhouette of the classic elegant womenswear. Thus, **FIGURE 1** functions as the initial conceptual bridge between cultural inspiration and fashion realization.



FIGURE 1. Moodboard design.

The fashion design was then developed into a transformable garment, as presented in **FIGURE 2**. The figure shows three different looks generated from one integrated clothing set. The blouse was designed with a front slit and buttons to facilitate wearability, while the skirt featured woven box-shaped arrangements inspired by the arrangement of temple stones. This woven detail created a strong and structured visual impression. The outer garment consisted of two combined layers, allowing the second look to appear when the first outer layer was pulled and released from its hook fastening. In this sense, **FIGURE 2** demonstrates not only the visual outcome of the design but also its functional transformation capacity. To further clarify the garment structure, the technical details of the product were illustrated in **FIGURE 3**, which presents the technical drawing of the garment. This figure is important because it explains the constructional components and supports the interpretation of the fashion design from a production perspective.

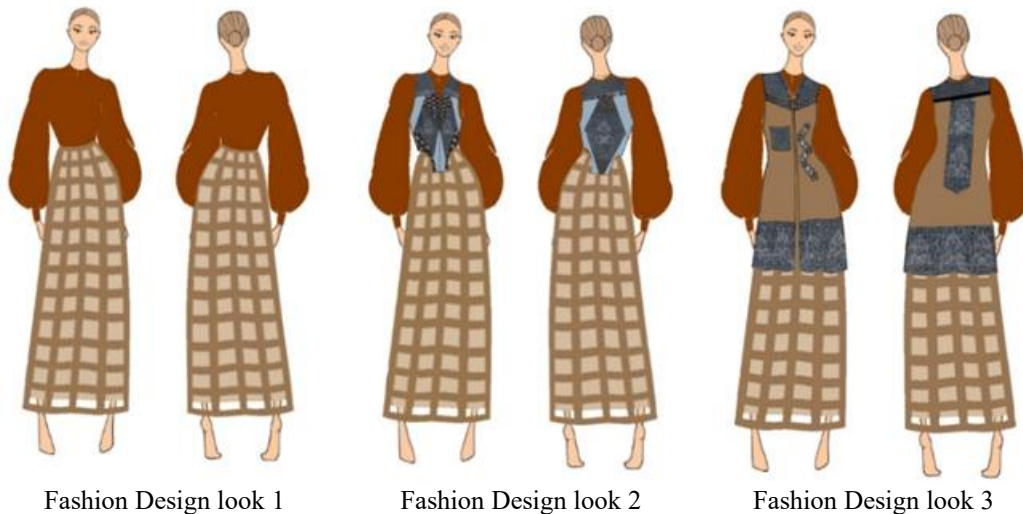


FIGURE 2. Fashion design.

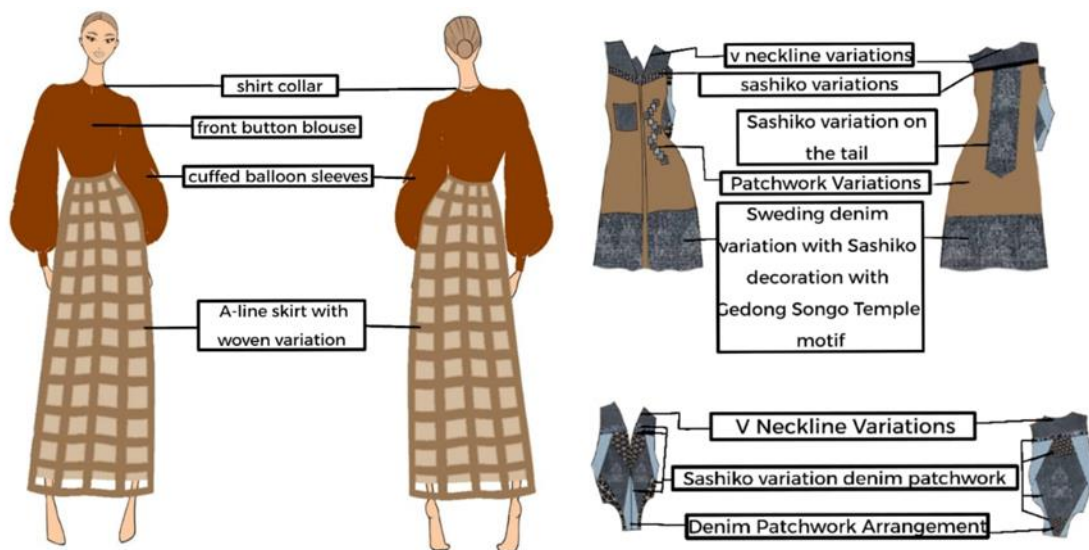


FIGURE 3. Technical drawing.

Design Validation and Product Validation

Product validation was conducted to assess the feasibility of the design concept and the finished garment. This process aimed to evaluate whether the product corresponded to the predetermined theme and whether it fulfilled the expected design and functional criteria. Three experts were involved in the validation process: Mrs. Retno Wijayanti, S.Pd., a Fashion Design and Production teacher at SMK Negeri 1 Karangawen; Mrs. Lyna Widyarti, owner of Double Eight Craft; and Mrs. Agustrin Ngahu, owner of Agustin Fashion. Validation data were collected through assessment questionnaires given to the experts.

The design validation was carried out by Mrs. Lyna Widyarti, who evaluated the fashion design and its associated moodboard using a four-point assessment scale, where 4 indicated *very good*, 3 *good*, 2 *fair*, and 1 *poor*. The result showed an average score of above 4, which in the manuscript was categorized as indicating that the design was feasible for use. The embroidery prototypes were prepared using the *moyozashi* technique, and the embroidery process reportedly required 40 hours per garment to ensure precision. The validated aspects included the suitability of the concept and source of ideas from Gedong Songo Temple, the application of the sashiko technique, conformity with classic elegant style, and creativity and aesthetic quality. As shown in **TABLE 1**, the design received very positive judgments across the assessed components, particularly in the interpretation of temple architecture, motif development, harmony of sashiko application, and overall design composition. Thus, **TABLE 1** demonstrates that the concept was considered coherent from both cultural and aesthetic perspectives.

TABLE 1. Design validation results for classic elegant womenswear inspired by Gedong Songo Temple.

No.	Assessment Aspect	1	2	3	4
A	Suitability of concept and source of inspiration (Gedong Songo Temple)				
1	Interpretation of the architectural form/silhouette of Gedong Songo Temple in the fashion design				✓
2	Interpretation of the motifs/ornaments/details of Gedong Songo Temple into design elements				✓
3	Suitability of the selected color palette to the atmosphere and characteristics of Gedong Songo Temple				✓
4	Successful integration of the ethnic source of inspiration (temple) into modern fashion design				✓
B	Application of the sashiko technique				
5	Clarity and precision of the sashiko motifs applied to the garment design				✓
6	Appropriateness of sashiko placement on garment parts (e.g., collar, cuffs, bodice)				✓
7	Quality and neatness of the sashiko stitching technique as represented in the design				✓
8	Harmony of the sashiko technique as the main decorative element of the garment				✓
C	Conformity with classic elegant style				
9	Suitability of the garment silhouette to the characteristics of classic elegant style				✓

10	Selection of materials and textures supporting the classic elegant impression	✓
11	Use of design details in reinforcing the classic elegant impression	✓
12	Overall representation of classic elegant style in the fashion design	✓
D Creativity and aesthetic aspects of the design		
13	Level of creativity in combining sashiko, Gedong Songo Temple, and classic elegant style	✓
14	Application of the principle of unity in the overall design	✓
15	Application of the principle of balance in the design composition	✓

Validation of the finished fashion product was then conducted by Mrs. Retno Wijayanti, S.Pd., and Mrs. Agustrin Ngahu. Similar to the design validation, the product was assessed using a four-point scale. The evaluation covered ease of wear, practicality, comfort, neatness of stitching, functional suitability, durability, usability, aesthetic value, and product appeal. The manuscript reports that the final product also achieved an average score of above 4, suggesting that it was considered feasible and suitable for use. As presented in **TABLE 2**, the finished product was positively evaluated not only in terms of appearance but also in terms of wearability and functionality. This indicates that the transformable garment did not sacrifice practical value for decorative appeal. Rather, **TABLE 2** suggests that the product achieved a balance between aesthetics, usability, and structural quality.

TABLE 2. Finished product validation results for classic elegant womenswear applying the sashiko technique inspired by Gedong Songo Temple.

No.	Statement	1	2	3	4
1	Ease of wear				✓
2	Practicality of wear				✓
3	Comfort of wear				✓
4	Neatness of stitching techniques				✓
5	Suitability of functional garment components to support wearability				✓
6	Stitching strength indicates a low probability of damage				✓
7	The garment demonstrates adequate primary functional value				✓
8	The garment demonstrates adequate secondary functional value				✓
9	Fulfillment of general standards of modest dress				✓
10	Suitability of the product as classic elegant style clothing			✓	
11	Harmony of all elements in the clothing product				✓
12	The clothing product demonstrates potential durability				✓
13	The clothing product demonstrates adequate usability				✓
14	The designed clothing has high aesthetic value				✓
15	The designed clothing has high visual appeal				✓

Product Trial and Material Selection

Before finalizing the product, product trials were carried out to identify the most suitable thread and material combination for the application of the sashiko technique. Four combinations were tested: denim fabric with rose embroidery thread, denim fabric with ordinary embroidery thread, denim fabric with cotton knitting thread, and denim fabric with DMC embroidery thread. The results indicated that each material possessed different characteristics in terms of strength and suitability for the embroidered motifs. Based on these trials, DMC embroidery thread was identified as the most appropriate material for the sashiko application in this study. This stage was important because it ensured that the final decorative effect was supported by a technically suitable material choice.

Application Process of the Sashiko Technique

The application of the sashiko technique involved several detailed stages. The garment was first developed through design preparation, measurement-taking, material cutting, marking, interlining pressing, sewing, and finishing. After the garment structure had been completed, the sashiko decoration process was carried out. The motifs were produced using white cotton thread on denim sweding fabric. The process started with determining the sashiko motif inspired by the ornaments and silhouette of Gedong Songo Temple. This pattern was then transferred onto the fabric using sewing chalk. Since the quality of the stitching strongly influenced the final result, this stage required careful precision,

neatness, and concentration. After the motif was marked, the thread was inserted into the embroidery needle, and the fabric was stitched manually using a basting or running stitch according to the prepared design. The process was repeated until the motif was completed, after which the thread ends were tied securely to prevent unraveling.

The visual transformation of the temple into sashiko patterns focused on two major architectural components. First, the roof structure (*prasada*) was transformed into overlapping horizontal and vertical lines resembling a modified *kagome* pattern. Second, the temple base was adapted into a *moyozashi* pattern using broken lines to create a strong rectangular silhouette. The embroidery was applied on indigo-blue denim to create a strong contrast with the off-white thread, symbolizing the weathered yet resilient stone of the temple. The stitch spacing was maintained at 5 mm with 2 mm between lines to ensure that the motif would remain visible at a normal viewing distance. These technical decisions were essential in preserving both the visual clarity of the motif and the symbolic relationship between the garment and the temple architecture.

The procedural stages of the sashiko application were also documented visually. As presented in **FIGURE 4**, the process began with drawing or transferring the sashiko motif design from paper onto the fabric. This stage served as the foundational guide for all subsequent embroidery work.



FIGURE 4. Drawing/transferring the sashiko motif design.

FIGURE 5 illustrates the manual application of the sashiko stitching to the cloth, showing how the decorative motif was gradually built through repetitive hand stitching. Meanwhile, **FIGURE 6** shows the technique used to tie the thread ends securely so that the stitches would remain stable and the motif would not be damaged. Therefore, **FIGURES 4, 5, and 6** play an important role in documenting the technical workflow of the embroidery process and in demonstrating the labor-intensive nature of the product development.



FIGURE 5. The process of applying sashiko technique to the cloth.



FIGURE 6. Tying the ends of the thread.

After the sashiko embroidery had been completed, the garment-making process continued with pattern-making, cutting, marking, sewing, finishing, and quality control. The final clothing construction involved blouse sewing, dress sewing, outer look 1, and outer look 2. This sequence indicates that the sashiko application was not merely an additional decorative step but an integrated part of the overall garment development process.

Final Product and Interpretive Discussion

The final product consisted of a blouse, a skirt, and a transformable outer garment that could be styled into three different looks. The resulting fashion work emphasized harmony between the design inspiration and the decorative technique used. Since the sashiko embroidery was executed manually, stitch by stitch, the process required considerable time and precision. The creation of outer look 1 using unused denim jeans also reflected the principles of sustainable fashion. In addition, the woven checkered arrangement on the skirt reinforced the silhouette and structural impression associated with Gedong Songo Temple. The earth-tone color scheme further strengthened the visual connection between the garment and the twilight atmosphere of the temple environment. The overall appearance of the finished product is presented in **FIGURE 7**, which shows the final realization of the design concept. In this context, **FIGURE 7** is important because it demonstrates the successful materialization of the cultural inspiration, transformable concept, and decorative embroidery in one complete fashion product.



FIGURE 7. Finished fashion product results.

From an interpretive perspective, the findings suggest that the application of the sashiko technique to classic elegant womenswear inspired by Gedong Songo Temple produced a distinctive and aesthetically valuable fashion product. This finding is in line with Portelli (2024), who argues that traditional costumes, crafts, textiles, and apparel are deeply rooted in culture and function as important vehicles for preserving and transmitting heritage across generations. In this study, Gedong Songo Temple was not merely used as a visual reference, but was transformed into a contemporary fashion language through silhouette development, motif adaptation, and material selection. Such an approach supports the idea that fashion can serve as an effective medium for safeguarding and recontextualizing cultural heritage in contemporary design practice (Portelli, 2024).

The positive expert validation results also indicate that the product successfully balanced cultural inspiration with contemporary aesthetic expectations. This result is consistent with Li et al. (2025), who found that historical continuity, knowledge transmission, and the integration of tradition and modernity are core factors in traditional craft innovation. In the present study, the architectural identity of Gedong Songo Temple was not reproduced literally, but reinterpreted through sashiko-based decorative patterns and a classic elegant silhouette. This suggests that innovation in fashion rooted in heritage is most effective when it preserves cultural meaning while adapting form and presentation to present-day design contexts (Li et al., 2025).

The findings also resonate with Brown and Vacca (2022), who emphasize that cultural sustainability in fashion depends not only on preserving craft techniques as visual ornaments, but also on maintaining the symbolic, social, and material values embedded in them. In the current study, sashiko functions not only as a decorative element but also as a representation of handcraft, patience, texture, and process value. Therefore, the resulting garment embodies not merely aesthetic appeal, but also a deeper cultural narrative produced through the encounter between Indonesian heritage and Japanese textile tradition. This strengthens the argument that the use of a decorative technique originating from another culture does not necessarily weaken local identity; instead, it can create a meaningful form of cross-cultural innovation when applied thoughtfully and contextually (Brown & Vacca, 2022).

In addition, the present study supports earlier work on the integration of cultural elements into fashion design. Yen (2017) notes that effective incorporation of local cultural characteristics into clothing styles can generate new design elements, increase product value, and create stronger emotional resonance for consumers. This is relevant to the current research, in which the visual and symbolic characteristics of Gedong Songo Temple were translated into embroidery motifs, structural details, and color choices. As a result, the garment does not function solely as apparel, but also as a cultural and creative product that communicates identity, memory, and aesthetic distinction (Yen, 2017).

Another important contribution of this study lies in the transformable character of the garment, which can be worn in three different looks. This feature aligns with Ma and Koo (2016), who found that transformable dresses can extend the life cycle of clothing by increasing versatility and encouraging repeated use, thereby supporting more sustainable apparel consumption. In the present study, the transformable concept adds functional value to the cultural and aesthetic dimensions of the design. Thus, the product not only preserves and reinterprets local cultural heritage, but also responds to contemporary concerns about utility, longevity, and sustainability in fashion design (Ma & Koo, 2016).

Overall, the findings indicate that this fashion product successfully integrates local cultural heritage, Japanese decorative craftsmanship, transformable clothing functionality, and sustainable fashion values. The study therefore confirms that cultural heritage can be preserved and reintroduced through fashion design in ways that remain innovative and globally relevant. More broadly, the findings contribute to contemporary fashion discourse by showing that tradition and modernity, local identity and cross-cultural exchange, and aesthetics and function can coexist productively within a single design outcome (Brown & Vacca, 2022; Li et al., 2025; Ma & Koo, 2016; Portelli, 2024; Yen, 2017).

Research Limitations

This study has several limitations. Although the research successfully produced a unique and aesthetically valuable fashion product, the process was limited to product development and expert-based feasibility assessment. The study did not proceed to mass production, large-scale user testing, or broader market evaluation. As a result, the findings primarily demonstrate the feasibility and design potential of the product rather than its commercial performance or wider consumer acceptance. Future studies may strengthen this line of inquiry by involving larger-scale wearer trials, consumer perception analysis, and market-oriented testing to evaluate the applicability of the product beyond the prototype stage.

CONCLUSION

This study demonstrates that the application of the sashiko technique to classic elegant womenswear inspired by Gedong Songo Temple can produce a fashion product with aesthetic, cultural, and functional value. The architectural elements of the temple were successfully transformed into textile motifs through a stylized sashiko application, showing that local cultural heritage can be reinterpreted in contemporary fashion design without losing its symbolic identity.

The findings also indicate that sashiko functions not only as a decorative element but also as a design strategy that enhances texture, exclusivity, and product distinctiveness. The resulting transformable garment, which offers three different looks, further strengthens the functional value of the design. Overall, this study confirms the potential of integrating local heritage, cross-cultural craft techniques, and transformable design concepts in the development of innovative and culturally grounded fashion products. Future studies may extend this work through broader user testing and further exploration of production efficiency and wear performance.

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