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Narasvara: The Design of a Convertible Upcycled Bag Using Stitch and Slash Technique with Buketan Motifs

Amelia Angelika*

Master's Program in Design, Indonesian Institute of the Arts Bali, Denpasar, Indonesia

*Correspondence author: ameliaangelika15@gmail.com

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Abstract

The increasing volume of textile waste generated by the fast fashion industry, particularly fabric offcuts often regarded as valueless, has become the primary background of this study. This issue highlights the need for a sustainable design approach that not only focuses on waste reduction but also emphasizes the creation of new aesthetic and cultural values from leftover materials. This study purposes is to explore the aesthetic and functional potential of offcuts and wasted fabric as the main material in the Narasvara bag collection, designed as a sustainable fashion product. The collection focuses on semi-formal convertible bag designs using an upcycling approach, combining stitch and slash textile manipulation techniques with Buketan batik motifs as key visual and cultural elements. The method employed is Material Driven Design (MDD), consisting of four stages: technical and experiential material exploration, material vision definition, user-material interaction analysis, and product concept development. The exploration involved various types of non-elastic fabrics to examine the visual and textural effects of the stitch and slash technique, as well as the adaptation of Buketan motifs into a contemporary design context. The outcomes are realized in three bag variations that emphasize both functional versatility and surface articulation. Evaluation was conducted through a survey involving 102 women aged 18–34 and interviews with three experts in batik, sustainable business, and product design. The results indicate that the designs are perceived as unique, aesthetically engaging, and functionally usable. While some respondents noted the visual density of the surface patterns, this was balanced by the simplicity of the overall form. This study demonstrates that textile waste can be recontextualized as a deliberate design element, contributing to contemporary sustainable fashion by emphasizing aesthetic transformation alongside cultural integration.

1. INTRODUCTION

Rising global awareness of environmental sustainability has significantly influenced the fashion industry to adopt more responsible production and consumption practices. One increasingly prominent approach is upcycling, defined as the transformation of waste materials into new products with greater value and functionality. This urgency is closely linked to the fast fashion

phenomenon, as Niinimäki et al. (2020) and Fletcher & Tham (2019) explain, which accelerates production cycles and encourages overconsumption, resulting in the substantial accumulation of textile waste. Textile waste, including scrap fabric, is often considered a low-value material despite its high recycling and design potential (Hawley, 2006). In Indonesia, textile waste accounts for 2,77% portion of national waste that is constantly rising by 0,19% per year, highlighting the need for more effective and innovative waste management strategies (SIPSN, n.d.). In industrial practice, scrap fabric is typically irregular scraps generated during garment production. Due to inconsistent dimensions and perceived limited usability, these materials are often discarded or sold at low economic value. This reflects a linear production paradigm that overlooks the potential of textile waste as a valuable design resource. Previous studies have argued that practices such as donating used clothing do not significantly reduce textile waste but merely redistribute the environmental burden (Leman et al., 2020). Furthermore, the environmental impact of textile waste extends beyond solid waste accumulation, including microfiber pollution and resource inefficiency (Sandin & Peters, 2018; Bick et al., 2018).

A growing body of research has explored textile recycling and material experimentation in fashion design. Techniques such as textile manipulation have been shown to enhance the aesthetic and functional value of discarded materials (Gwilt, 2014; Earley, 2017). Specifically, according to Tariq (2023), stitching and incising techniques have been recognized for their ability to produce textured surfaces resembling faux chenille, offering rich visual and tactile qualities. However, existing studies tend to focus primarily on technical exploration and surface aesthetics, often resulting in repetitive visual outputs without integrating specific elements or specific patterns into the design process (Kozlowski et al., 2019; Armstrong et al., 2016). On the other hand, batik is a significant Indonesian cultural heritage, offering strong aesthetic, symbolic, and narrative value. Previous studies have shown that batik motifs are widely considered elegant, unique, and culturally meaningful, especially among young consumers (Yulianita & Sukendro, 2019). Integrating traditional motifs into contemporary designs has the potential to enhance product identity and cultural relevance (Nugraha et al., 2021). However, there is limited research combining textile recycling, advanced textile manipulation techniques, and the structured integration of traditional motifs within a cohesive product design framework. However, this study positions textile manipulation not merely as a technical exploration but as a design strategy to redefine the visual and material identity of fabric waste within a product context.

Despite the growing research on textile recycling and material experimentation, existing studies largely emphasize technical manipulation and aesthetic surface development, with limited integration of culturally embedded visual systems within a structured design framework. Therefore, this study proposes a design-oriented approach in which fabric waste is not only reused but also visually redefined. Through stitch and slash techniques combined with Buketan batik motifs, the material is intentionally developed to appear structured and aesthetically cohesive, rather than irregular or waste-like. Based on this gap, this study aims to explore the potential of non-elastic fabric scraps as the primary material in designing a collection of convertible semi-formal bags entitled Narasvara. This research adopts the Material Driven Design (MDD) approach outlined by Karana et al. (2015); Martono & Puspita (2022), which investigates the technical, sensory, and experiential qualities of textile waste materials, enabling designers to translate material characteristics into innovative design opportunities. The integration of stitching and slashing techniques with Buketan batik motifs is expected to produce designs that are not only functional but also culturally expressive and visually distinctive. While the Material Driven Design (MDD) framework guides the process, this research primarily focuses on the application of material exploration outcomes into product design, particularly how manipulation

techniques and cultural elements contribute to the final product's aesthetic, function, and user perception.

The significance of this study lies in its contribution to sustainable design practice by demonstrating how fabric waste can be transformed into high-value products through a combination of material exploration and cultural integration. Theoretically, this research contributes to the discourse on material-based design, sustainable fashion, and culture-based innovation. Practically, this research demonstrates how textile waste can be transformed into high-value fashion products through intentional design decisions, emphasizing the role of texture, pattern, and cultural integration in enhancing product appeal and usability. This study is limited to exploring non-elastic textile waste materials obtained from garment production and textile retail sources. The design scope focuses on the development of a semi-formal convertible bag using stitching and slashing techniques with application of the Buketan motif. Variations in color, texture, and material type are not standardized due to the inherent variability of waste materials. Despite these limitations, this research provides a relevant approach to redefining textile waste as a valuable and meaningful resource in contemporary design practice.

2. METHODS AND THEORY

2.1 Methods

This study employs a design-based approach focusing on the development of a semi-formal convertible bag collection (Narasvara) through the application of textile manipulation techniques and cultural motifs. The research emphasizes how material exploration informs design decisions, particularly in transforming fabric waste into intentional aesthetic elements within the final product. The primary materials consist of non-elastic textile waste, including satin, linen, and rayon fabric offcuts obtained from garment production and textile retail sources (Figures 1 and 2). These materials vary in size and characteristics, reflecting real-world conditions of textile waste. This variability is intentionally embraced as part of the design process, allowing irregular material characteristics to inform texture, pattern composition, and visual identity. The main technique applied is stitch-and-slash (faux chenille), involving 6–8 fabric layers stitched at intervals of approximately 0.8–1 cm and selectively cut to produce textured surfaces. Beyond its technical function, this technique is used as a design strategy to control the visual outcome, creating structured textures that reframe the perception of fabric waste as a deliberate and refined surface treatment.

Figure 1. Tropical Convection and Fabric Scraps
(Source: Author, 2025)

Figure 2. Adhi Convection and Fabric Scraps
(Source: Author, 2025)

The study involved 102 respondents, primarily women aged 18–34 years, representing the target market segment (students, freelancers, office workers, and homemakers). Additionally, three expert participants (a batik practitioner, a sustainable textile practitioner, and a product design academic) were selected through purposive sampling. All participants provided voluntary consent, and responses were collected anonymously. Data collection employed a mixed-method approach. Quantitative data were gathered through online surveys to measure user perceptions of aesthetics, functionality, and product value. Qualitative data were obtained through observation during material exploration and semi-structured interviews with experts.

The design process consists of iterative stages, beginning with material exploration through stitch and slash techniques combined with Buketan motifs, followed by the identification of desired aesthetic and functional qualities. These findings are then translated into product design by aligning material characteristics with user needs, resulting in the development of three convertible bag prototypes in varying sizes. Data analysis was conducted using descriptive statistics for survey data and thematic analysis for qualitative findings. Evaluation criteria include visual appeal, usability, and perceived cultural and sustainability value. User evaluation highlights that while the textured surfaces were perceived as unique and visually engaging, some respondents noted a high level of visual complexity. However, this was balanced by the simplicity of the bag form, creating a complementary relationship between material expression and product design. This study is limited by the variability of fabric waste materials and the small-scale nature of prototyping, which may affect consistency and scalability.

2.2 Theory

This research is grounded in theories of sustainable fashion, material-based design, and user experience. The concept of upcycling refers to the transformation of waste materials into products with higher value and extended usability, and is positioned as a response to the environmental impacts of fast fashion, particularly textile waste accumulation and overconsumption (Niinimäki et al., 2020; Fletcher & Tham, 2019). Within circular design strategies, upcycling contributes to reducing environmental impact while enhancing product longevity and value (Geissdoerfer et al., 2017; Sandin & Peters, 2018). The study is informed by the Material Driven Design (MDD) framework, which positions material as a central driver in the design process. This approach emphasizes understanding both the technical and experiential qualities of materials to generate meaningful design outcomes (Karana et al., 2015; Pedgley et al.,

2021; Rognoli et al., 2017). In this study, MDD is applied not only to understand material properties but to guide how these properties are translated into design elements such as texture, structure, and visual composition within the bag collection.

In addition, textile manipulation techniques play a significant role in shaping material aesthetics. Tariq (2023) and Gwilt (2014) highlight that the stitch and slash technique is capable of producing layered textures and enhancing visual complexity in textile surfaces, contributing to innovative material expressions. In this study, the stitch and slash technique is positioned not merely as a method of surface development but as a design strategy for shaping material identity within the product. The integration of cultural elements is supported by theories of batik as a form of visual identity and cultural expression. Batik motifs function not only as decorative elements but also as carriers of symbolic meaning that enhance product differentiation in contemporary design (Yulianita & Sukendro, 2019; Nugraha et al., 2021). In this research, Buketan batik motifs are incorporated as part of the design system, contributing to both visual structure and cultural meaning rather than functioning as mere decoration. Furthermore, this study adopts the Emotional Design framework, which categorizes user experience into three levels: visceral (aesthetic response), behavioural (functionality), and reflective (meaning and value) (Norman, 2004; Desmet & Hekkert, 2007). This framework is applied to evaluate how users perceive the final products, particularly in balancing visual complexity (visceral), usability (behavioural), and cultural as well as sustainability values (reflective).

3. RESULTS AND DISCUSSION

3.1 Result

3.1.1 Designing Product

At this stage, the design process is divided into several stages: idea development in the form of sketches, design selection based on criteria, product modelling, and the final product realization process. Design development was carried out in three product dimensions, small, medium, and large. This development also referred to the concept and impression being promoted, namely a Palletism Folksy (minimalist ethnic elegance) intended for smart casual or semi-formal wear. In the design process, the Narasvara collection was conceived as a semi-formal convertible product. This convertible approach provides high flexibility without increasing the user's carrying capacity, making it efficient for a variety of activities, both casual and semi-formal. To enhance durability, each part of the construction is reinforced by layered non-elastic fabric scraps, as well as the addition of lining and load-bearing layers to key areas. From an aesthetic perspective, stitch and slash techniques were chosen because they can produce a dynamic and artistic visual texture and maximize the use of fabric scraps without compromising the bag's structural strength. This combination of functional flexibility, material strength, and visual aesthetics allows for the creation of designs that are both attractive and robust for everyday use. This stage demonstrates how material characteristics and manipulation techniques directly inform design decisions, particularly in balancing structural strength, visual complexity, and functional adaptability.

3.1.2 Design Development

The main focus of the development was to create minimalist, modern designs, yet still rooted in ethnic values, by providing rich functional value through changes in usage or visual transformation of the product. The designs were developed in three dimensions: small, medium, and large, under the same collection. The primary material used was fabric scraps, a result of stitch and slash techniques, incorporating the Buketan motif. The design development explores

three size variations (small, medium, and large) within a unified system, where each scale adapts the composition of texture, motif, and function while maintaining design consistency.

This small design (figure 3) measures 20 x 12 x 8 cm (length x height x width). Its development focused on versatility, allowing the bag to transform into a handbag or clutch, a shoulder bag, and a crossbody bag. This design is intended for everyday use with a relatively small capacity.

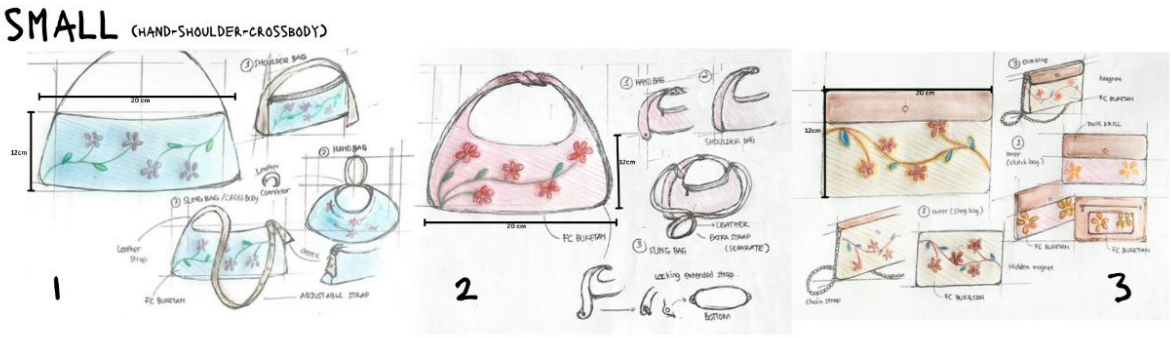

Figure 3. Small Dimension Design Sketch Compilation
(Source: Author, 2025)

This medium-sized design (figure 4) measures approximately 30 x 20 x 10 cm (length x height x width). Its development focuses on flexibility, allowing the bag to transform into a shoulder bag, crossbody bag, or even a backpack. Some designs feature removable pockets. This bag is designed for daily activities, such as school or work, with a medium capacity.

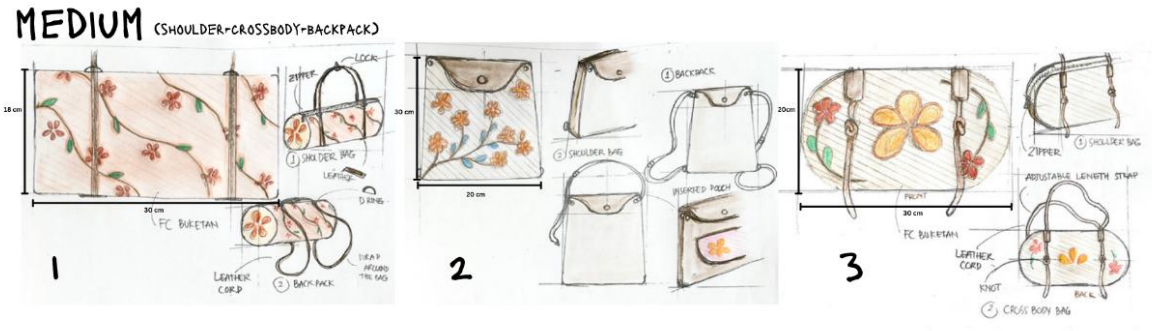

Figure 4. Medium Dimension Design Sketch Compilation
(Source: Author, 2025)

This large-sized design (figure 5) measures approximately 40 x 25–28 x 12 cm (length x height x width). Its development focused on flexibility, allowing the bag to transform into a shoulder bag, crossbody bag, or backpack. Some designs feature removable pockets as needed. This bag is designed for everyday activities, such as school or work, with a larger capacity.

Figure 5. Large Dimension Design Sketch Compilation
(Source: Author, 2025)

3.1.3 Final Design Selection and Modelling

The final design selection during the design exploration phase was conducted through an evaluation process based on previously developed design criteria mapping, with reference to Donald A. Norman's Emotional Design theory. This theory divides user experience into three levels: visceral, behavioral, and reflective. These three levels are then elaborated in design aspects such as visual aesthetics, function and comfort, and cultural values and sustainability. Based on the overall evaluation, the final design selection was made by considering the strengths of each design at three levels of user experience. The selected designs from each category demonstrated the ability to visually capture attention through texture and motif (visceral), ensure usability and comfort (behavioral), and represent relevant cultural values and sustainability narratives (reflective). Thus, the selected designs not only met the formal criteria of minimalist and aesthetic design but also succeeded in creating a comprehensive and meaningful product experience for users. This evaluation highlights the importance of balancing visual complexity from material exploration with simplicity in overall form to maintain usability and user acceptance.

The three selected designs were also given names that reflect the product's function, aesthetic, and story, reinforcing the collection's unity. This move was taken to highlight the elegant ethnic imagery within the Palettism Folksy concept, so that the Narasvara collection not only offers flexibility in use but also showcases cultural beauty in a modern and dynamic style. Product models were also created for the three selected designs to examine the manufacturing process, product dimensions, and usage mechanisms, as well as to review and evaluate the designs. This modelling process was conducted to reduce the risk of errors in product implementation using the explored materials.

The name Trimini (figure 6) is a combination of the words "Tri" (three) and "Mini" (small), reflecting the design's character as a small bag with three main functions: clutch, shoulder bag, and sling bag. The design's primary focus is adaptability, with a detachable pouch that can be removed and used as a clutch when separated from the main bag. Furthermore, the bag's strap is adjustable in length, enabling it to transform from a shoulder bag to a crossbody bag. The Trimini design also minimizes the use of hardware to emphasize the texture and character of the materials explored. The magnetic locking system is implemented discreetly within the bag lining, creating a seamless look that maintains the aesthetics of the material without the interference of external elements.

Figure 6. Selected Design 1 (Small): Trimini
(Source: Author, 2025)

The name Dwinara (Figure 7) refers to two Sanskrit words: "Dwi" (two) and "Nara" (human), which represent the dual roles inherent in modern women's lives. This bag is intended to represent the balance between assertiveness and gentleness, as well as independence and emotional warmth. Dwinara is designed with a change from a backpack to a shoulder bag, giving the wearer the freedom to customize the bag to their needs. The main focus of this design is shape transformation, with larger dimensions of (L) 20 cm x (H) 30 cm x (W) 10 cm, making it suitable for various daily activities, from school to work. This bag also features a detachable pocket, which can be used separately or as an organizer within the main bag, adding to its practicality. A magnetic closure system is hidden within the bag's lining, creating a seamless look without compromising functionality. Furthermore, hardware is minimized for a cleaner design while highlighting the character of the explored materials.

Figure 7. Selected Design 2 (Medium): Dwinara
(Source: Author, 2025)

Luwita is a large bag design with dimensions of (L) 40 cm x (H) 28 cm x (W) 12 cm. The name Luwita is derived from the Javanese word "Luwes," which implies flexibility, gentle movement, and the ability to adapt to various situations. This name is intended to reflect the bag's character, which presents two distinct looks in one reversible design: a simple and elegant side and a more expressive and bold side. The exterior of the Luwita (figure 8) utilizes the results of material

exploration, resulting in a richer and more varied color palette, while the interior uses twill drill, creating a simpler and more neutral look. When turned inside out, the pouch, made from the material exploration, in the form of chenille Buketan, can be placed on the outside as an accent, maintaining a dynamic and non-monotonous design. This pouch can also be worn separately as a wallet or clutch, adding value in terms of functionality and style.

Figure 8. Selected Design 3 (Large): Luwita
(Source: Author, 2025)

Structure and adjustment of bouquet motifs in design, The Buketan motif is a batik motif featuring floral arrangements (figure 9), reflecting a high level of beauty, tenderness, and feminine aesthetics. Its natural character and independence from geometric conventions make it a relatively flexible motif for contemporary design and material manipulation.

Figure 9. Buketan batik motif reference.
Middle: Digital rendering based on daisies as the main motif.
(Source: Author, 2025)

In designing the Narasvara collection, the Buketan motif was not taken directly, but rather through a visual adaptation process that took into account the characteristics of the stitch and slash techniques. This process began with the selection of a central flower shape in the Buketan motif as the focus of exploration: the daisy. This flower was chosen for its familiar shape, proportions, and ability to be visually translated through the cut and layering of fabric scraps used in the technique.

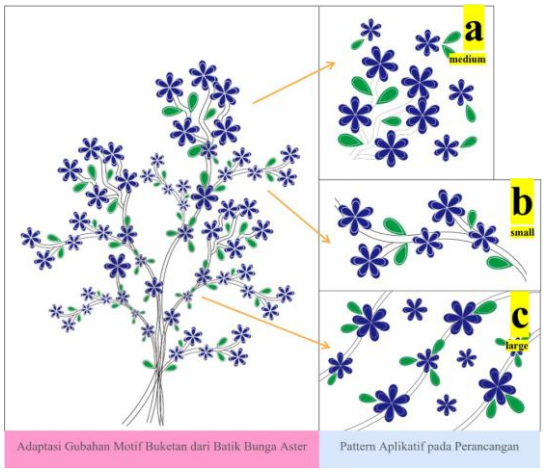

Figure 10. Division and adjustment of motif shapes on three bag sizes: medium (a), small (b), and large (c)
(Source: Author, 2025)

The next step was to transform the daisy shape into new visual elements more suitable for application with the stitch and slash technique. This composition process considered: clarity of form when manipulated through layers of textile, legibility of form in layered textures, and the possibility of creating a harmonious visual rhythm when the motif is split or cut. After the composition process was complete, the daisy elements and other supporting elements were reassembled into a complete motif series, which structurally adhered to the Buketan composition, namely, a central motif (dominant flower) and visual accompaniments (leaves, stems, and small flowers). This composition then served as a master motif that would be partially applied to three bag designs of varying sizes. This approach was based on the idea that a single motif series can be broken down into several parts, creating visual continuity across products within a collection. This thinking also took into account the limitations of product dimensions and the application of the stitch and slash technique. Motifs that are too small or stacked too closely together can make it difficult to achieve the motif with this technique. So based on this thinking, even though each bag has a different motif, overall the three form a complete visual narrative—reflecting the unity of motif in a diversity of forms. This process demonstrates how traditional motifs can be structurally reinterpreted to align with the constraints and possibilities of textile manipulation techniques, rather than being directly applied as surface decoration.

3.1.4 Product Realization

The product realization stage represents the implementation of previously developed material explorations. At this stage, the design is evaluated not only in terms of form and function but also in terms of the material's adaptability to actual product requirements. Since the explored materials have different thicknesses compared to the initial prototypes, several adjustments and refinements were necessary. Therefore, this stage serves both as a technical process and as an evaluation of the material-based design approach. To simplify, this stage is divided into three parts: production process, design iteration, and final product.

The production process integrates material development using the stitch and slash technique with the application of the Buketan motif directly into the design. This approach ensures efficient use of fabric scrap materials and facilitates pattern application according to design needs. The process begins with sorting fabric scraps, then washing and drying. The fabrics are layered on a base fabric, incorporating selected color compositions to create the Buketan effect. Temporary adhesive is used to stabilize the layers before stitching. Next, stitching is applied following the motif pattern, initially using a manual sewing machine (figure 11) and later replaced with a digital embroidery machine to improve precision and consistency. After stitching, the fabric undergoes slashing, where layers are cut to reveal color variations and form the motif. The final step is brushing, which opens the fabric fibers to create a textured, chenille-like surface, enhancing both visual depth and motif clarity. These technical adjustments reflect the iterative nature of material-driven design, where production constraints directly influence design refinement and decision-making.

Figure 11. Manual Sewing Process following the Pattern and the Results
(Source: Author, 2025)

Design development from the model (iteration), occurred simultaneously with production due to technical challenges. Several key adjustments were made, including material production technique; manual stitching was replaced with digital embroidery to achieve higher precision, stronger seams, and more consistent textures, especially for thicker layered materials. And also, some hardware and the visual appearance of the design are adjusted. These iterations improved structural integrity, usability, and visual coherence across all designs.

Figure 12. Final Product Result with Model
(Source: Author, 2025)

The final products are developed from upcycled fabric scrap materials using the stitch and slash technique, targeting individual users aged 20–35 with active lifestyles and sustainability awareness. Resulting in three bag variations (figure 12) within the Narasvara collection, Trimini (Small): A compact sling bag (20 × 16 × 6 cm) with a detachable pouch that can function as a clutch, designed for light, semi-formal use. Dwinara (Medium): A convertible bag (30 × 20 × 10 cm) that transforms between a backpack and a shoulder bag, suitable for daily activities such as work or study. Luwita (Large): A reversible tote bag (40 × 28 × 12 cm) offering two visual styles, textured and minimal, providing flexibility for different occasions. All designs embody the Palletism Folksy concept, combining color composition (palette), simplicity (minimalism), and cultural expression (folksy) through the Buketan motif. The materials include stitched-layered fabric scraps, drill fabric lining, and synthetic leather, with hidden magnetic closures for a seamless finish. Each product features a detachable pouch, enhancing functionality. The unique textures and colors produced by the technique make each product non-replicable, resulting in limited, exclusive items.

3.2 Discussion

3.2.1 Interpretation of Design Outcomes, Cultural Values, Sustainability, and User Experience

This aligns with a material-driven design approach that can successfully produce products with strong visual identity, functional adaptability, and cultural significance without compromising the material character and value. The stitch and slash technique serves not only as a method of textile manipulation but also as a key aesthetic element that distinguishes the products from conventional bag designs. The effectiveness of the selected designs across size categories highlights the importance of integrating motif clarity, functional flexibility, and cultural narrative. These aspects collectively enhance the overall design quality, balancing visual appeal with usability.

The adaptation of the Buketan motif demonstrates that traditional elements can be reinterpreted within contemporary design contexts without losing their identity. Beyond decorative purposes, the motif functions as a medium of cultural storytelling, reinforcing the reflective and symbolic value of the products. From a sustainability perspective, the use of upcycled materials highlights the potential of fabric waste to be transformed into high-value design products. The findings suggest that material limitations can be reframed as creative opportunities, where variability in texture and color contributes to uniqueness and exclusivity. However, challenges such as production complexity, dependence on specialized equipment, and consistency control remain important considerations. In terms of user experience, some users perceived the surface patterns as visually complex. However, this complexity is balanced by the simplicity of the overall product form and the flexibility offered by the convertible system. This contrast between rich texture and minimal structure plays a significant role in enhancing user acceptance. Furthermore, the perceived irregularity of fabric waste is successfully transformed into an intentional aesthetic quality, shifting user perception from “waste” to “designed material.”

3.2.2 Limitations, Future Research, and Research Contribution

Despite its contributions, this study has several limitations. The production process is limited to small-scale development, material variability restricts standardization, and user testing remains relatively limited in scope. Future research is recommended to explore more efficient and scalable production techniques, develop modular design systems for greater adaptability, and

conduct broader user and market acceptance studies. This study contributes to the field of design by advancing the application of Material Driven Design in upcycling contexts, integrating cultural elements into contemporary product design, and proposing innovative approaches to sustainable fashion through the transformation of textile waste into functional and meaningful products.

4. CONCLUSION

This study demonstrates that a material-driven design approach, combined with the stitch and slash technique, can effectively transform fabric waste into products with strong aesthetic, functional, and cultural value. The findings show that fabric waste can be redefined through layered manipulation, producing distinctive textures and visual identities while maintaining usability and structural performance. The application of Material Driven Design enables the translation of material characteristics into design outcomes that balance visual complexity, functionality, and flexibility. The integration of the Buketan batik motif further strengthens the design by contributing cultural meaning and visual differentiation. Rather than functioning solely as decoration, the motif is reinterpreted as part of the design system, enhancing both aesthetic depth and symbolic value while remaining recognizable to users. This demonstrates that traditional elements can be adapted into contemporary product design without losing their identity.

From a sustainability perspective, this study highlights the potential of upcycling to reposition textile waste as a valuable design resource. Material irregularities are reframed as intentional aesthetic qualities, resulting in unique and non-replicable products. However, challenges related to production complexity, material variability, and scalability remain key considerations for future development. Future research is recommended to explore more efficient production methods, scalable systems, and broader user evaluation. Further interdisciplinary approaches, including digital integration and the exploration of therapeutic aspects in textile processes, may also expand the scope of design innovation. Overall, this study contributes to sustainable design practice by demonstrating how material exploration, cultural integration, and product design can be combined to create meaningful and high-value fashion products. The Narasvara collection illustrates that design can function not only as a practical solution but also as a medium for cultural expression, user experience, and environmental awareness.

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In the Declaration on the Use of Artificial Intelligence (AI), the author declares that the limited use of Artificial Intelligence (AI). AI was not used in the generation, manipulation, or analysis of research data, nor in the development of research findings or scholarly arguments. All data, results, and interpretations presented in this article are original and derived from the authors' independent research.

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