

AESTHETICS AND INNOVATION: DIGITALIZATION IN THE DEVELOPMENT OF KALIMANTAN MOTIF DESIGNS

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ABSTRACT

In the current digital era, technology has brought significant changes to various aspects of life, including the fields of art and design. This article aims to elaborate on the role of digitalization in the development of motif design, particularly in the creation of 2D motifs inspired by Kalimantan's traditional ornamental patterns using digital software. Many artists working with traditional motifs, especially those crafting Kalimantan-specific designs in various regions, have yet to adopt digital software to aid in their design processes. The article describes the use of the Practice-Led Research methodology with the following stages: 1) Pre-Design Stage: Collection and exploration of relevant references and visual sources related to the forms and motifs of Kalimantan's culture; 2) Design Stage; 3) Realization Stage; and 4) Presentation Stage. The findings and results of the research indicate that the collaboration between aesthetics and technology can enrich the beauty of motif designs and open new opportunities in the art and design industry. This collaboration produces a harmonious blend of artistic tradition and technological innovation, allowing for the creation of more dynamic and contemporary works.

Keywords: digitalization, motif design, Kalimantan traditional patterns, CLO-3D, Practice-Led Research

INTRODUCTION

Kalimantan is one of the regions in Indonesia that is rich in cultural heritage, including various ethnic motifs inspired by nature, mythology, and the lives of local communities. These motifs emerged from the beliefs, surrounding environment, and daily activities of the communities that created them (Nurani & Setyawan, 2023). For example, the hornbill motif found on the traditional attire of the Dayak Kanayatn people conveys meanings associated with life, fertility, and courage (Pranoto, Pratiswa, & Undiana, 2020). In addition to serving as decorative elements, these motifs embody profound philosophical values and constitute an important visual identity of Kalimantan's culture. Along with technological developments, the creative process of developing and modernizing these motifs has undergone significant transformation through digitalization. Digitalization in traditional motif design enables artists and designers to explore new aesthetic forms and expand the possibilities for innovation (Albahi, 2024). The adaptation of traditional motifs into digital media can also be carried out

while preserving their authenticity and uniqueness, while simultaneously introducing them to younger generations (Maqdir & Budiman, 2024). In this way, the uniqueness of Kalimantan's cultural heritage can be preserved and introduced within a global context.

In this context, aesthetics and innovation play an important role in responding to the demands of the times. The collaboration between aesthetics and technology not only enriches the visual appeal of motif designs but also creates new opportunities in the art and design industries (Albahi, 2024). Digitalization offers opportunities to accelerate the design process; 3D simulation software such as CLO, for instance, enables patterns and prototypes to be created virtually, thereby reducing production time and minimizing fabric consumption (Renaningtyas, Tedjokoesoemo, & Krisentia, 2024). In addition, digital technology provides broader access for communities to appreciate and adopt Kalimantan motifs in various creative products, ranging from fashion to contemporary visual arts. However, behind this considerable potential lies the challenge of maintaining the authenticity and depth of meaning of traditional motifs when they are adapted into digital media. The meanings of motifs transmitted orally can easily shift, making it necessary to study and document them in written form (Nurani & Setyawan, 2023). Therefore, the development of contemporary motifs needs to be grounded in regional potential and local wisdom (Nurchayanti & Bina Affanti, 2018).

Motif design plays an important role in various aspects of human life, particularly in fashion, batik, and weaving. As a design object, motifs are not only concerned with aesthetic, symbolic, and practical functions, but also take into account aspects such as concepts, material characteristics, techniques, and the energy sources used (Joedawinata, 2008, p. 58). In an academic context, the process of creating designed products or garments involves several important stages. These stages include the development of ideas and the visualization of concepts, which ultimately result in finished garments through digital processes. Digital designs, created and developed using design applications or other design media, provide a high degree of flexibility in design development. These applications facilitate the determination of design lines, colors, shapes, textures, and other details, thereby supporting the creation of innovative and accurate designs (Asmayanti et al., 2020, pp. 61–72). In motif design practice, software such as Adobe Illustrator is commonly used to redraw sketches into vector forms before they are applied to fabric (Maqdir & Budiman, 2024; Patappa, 2019).

At present, the use of digital design technology among practitioners of traditional Kalimantan ornamental motif design, particularly within micro, small, and medium enterprises (MSMEs), remains relatively limited. A similar condition has been observed among batik and weaving MSMEs in several areas of West Java, where the use of digital devices remains uncommon (Albahi, 2024). Many practitioners are still unfamiliar with advances in digital design technology, particularly software such as Adobe Illustrator and CLO-3D. This situation is influenced by several factors, including limited access to technological devices and a lack of knowledge and skills in using design software in the context of contemporary modernization. Assistance programs, such as design clinic training for Sintang ikat-weaving artisans, demonstrate that efforts to improve the design skills of local artisans can be facilitated by translating ideas derived from their surrounding environment into motifs (Tobroni, Rujianto, & Soedarso, 2018). Modernity refers to a way of life that distances itself from traditional orders through ways that have not previously existed (Giddens, 2005, p. 5). In this context, design serves as a bridge between tradition and modernity because design is a process that involves the creativity and innovation of its creators. Design is an activity of organizing the elements of an artwork that requires guiding

principles, including unity, balance, rhythm, and proportion (Hendriyana, 2020; Susanto, 2012).

Motif design is created to provide experiences or convey messages that can influence human feelings, thoughts, and perspectives on life through digital design approaches. Likewise, in fashion, artistic works can be translated and applied to fashion product designs. Fashion is closely connected to everyday life. The term fashion is defined as a style accepted and adopted by the majority of a group at a particular time (Troxell, 2010). The development of fashion products cannot be separated from the creativity of designers, and such development can be undertaken by anyone with relevant knowledge, creativity, or experience in the field (Haidarsyah, 2024, p. 2).

This article aims to examine how digitalization can transform and develop Kalimantan motif designs from the perspectives of aesthetics and innovation. It explores various aspects, including digital design technology, the reinterpretation of traditional aesthetics, as well as the opportunities and challenges involved in the digitalization process.

Inspiration from Kalimantan Ornamental Motifs

Kalimantan ornamental motifs are known for their diversity of forms and profound meanings. Prominent motifs characteristic of Kalimantan include various motifs derived from its natural and cultural heritage. These motifs not only display visual beauty but also embody valuable cultural meanings. In the current digital era, the use of digital design software such as Adobe Illustrator and CLO-3D enables these motifs to be recreated in innovative and aesthetic ways, combining tradition with modern technology.



Figure 1. Kalimantan Batik Motif
Source: Batik Dayak (Sahabatnesia.com)



Figure 2. Hornbill Motif
Source: Hornbill Photo (P-s-q.com)

Within Adobe Illustrator and CLO-3D, Kalimantan ornamental motifs can be applied using various design features that enable the accurate simulation of textures, colors, and forms. The use of this technology facilitates experimentation with design variations and scales, providing designers with greater flexibility to explore combinations that may be difficult to achieve manually. CLO-3D also enables three-dimensional visualization, allowing motifs such as ferns, hornbills, and the Kancet Papatai dance to be visualized in relation to the form and structure of garments, thereby providing greater and more nuanced aesthetic value.

Aesthetic Value of the Artwork

The use of fern, hornbill, and Kancet Papatai dance motifs in Adobe Illustrator and CLO-3D provides significant advantages in terms of the aesthetic value of the resulting works. Digital technology enables the creation of designs that not only utilize the beauty of traditional motifs but also introduce innovation in the ways these designs are applied. Designers can easily explore various possibilities of texture, color, and pattern, creating works that not only preserve traditional aesthetic values but also offer new perspectives.

METHOD

The method used to realize the collaboration between aesthetics and technology in this study is Practice-Led Research. In the stages of the creative process, the researcher adapts the practice-led research framework for craft creation, which consists of four stages: (1) the pre-design stage, (2) the design stage, (3) the realization stage, and (4) the presentation stage. The stages of the design process are illustrated in Figure 3.

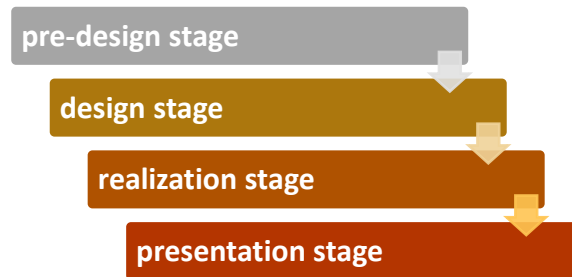


Figure 3. Flowchart of the Practice-Led Research Method for Craft Creation
Source: Gustiyan Rachmadi in Hendriyana (2018)

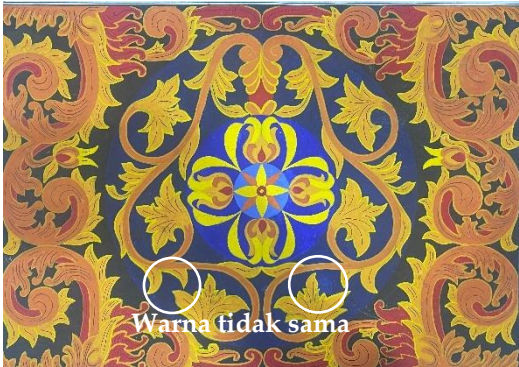
In visual arts, crafts, and design research, there is no single theoretical model that can be universally applied, given the unique characteristics of the arts and humanities, which depend on the object and topic of the research. The uniqueness and specificity of the relevance and correlation between the research object and subject also influence the approach employed.

RESULTS AND DISCUSSION

In the development of motifs through practice-based research, a comparison between manual and digital processes reveals significant differences. Although manual processes offer a high degree of uniqueness and personal touch, they often require more time and are less flexible when accommodating changes. In contrast, digital processes offer greater efficiency, high precision, and ease of documentation and motif preservation. Digital design enables variations and innovations to be developed quickly and provides long-term cost efficiency, although it requires a greater initial investment. Therefore, while manual methods remain important for maintaining traditional values, digital technology provides significant advantages in terms of efficiency and design innovation.

A comparison between manual and digital processes in motif development through Practice-Led Research reveals several significant differences in terms of efficiency, flexibility, and final outcomes. Several aspects that can be compared include:

Table 1. Comparison between Manual and Digital Processes in Motif Design

Aspect	Manual Process	Digital Process
Efficiency	Requires more time and in-depth skills.	Motifs can be created and edited quickly, reducing the time required.
Flexibility		
	Requires a work table during the process.	Requires a work table during the process.
Accuracy and Precision	 Mussa A Hendriks, 2020 (Dok. peneliti, 2024)	 Haidarsyah, 2024 (Dok. peneliti, 2024)
	Accuracy and consistency can be challenging, particularly for highly detailed motifs.	Provides high precision and very fine details.
Cost	More affordable because it only requires basic materials and tools.	Higher operational costs, but serves as a long-term investment.

Pre-Design Stage

At this stage, the researcher conducts preliminary research on the relevant object, namely distinctive Kalimantan ornamental motifs, as a source of ideas for motif development. Before entering into the exploration of form, type, and visual style in basic visual artworks, it is important to first understand the process of creation (Hendriyana, 2015, p. 5). Form refers to the appearance, shape, structure, or representation of anything found in nature, including works of art or design, which can be simplified into points, lines, planes, and colors (Sadjiman, 2009, p. 93).

Sources of inspiration and ideas are obtained from one or more problem areas within the domains of creativity and innovation, including case studies, problem solving, and cultural trends (Hendriyana, 2018, p. 31). These sources of inspiration and ideas are subsequently developed into a moodboard as an effort to translate visual language into the realization stage of digital motif design.



Figure 4. Kalimantan Motif Ideas: (a) *Polystichum setiferum* fern, (b) hornbill, (c) Kancet Papatai Dance

Formulation of the Design Concept

A concept is a means of addressing phenomena related to form, materials, techniques, visual appearance, and function, expressed in the form of an image. Consistency in a designer's planning of the visual concept for each work represents an effort to establish an identity, allowing the resulting works to be distinguished from those of other artists (Wibowo, 2015, p. 19). In the design creation stage, the concept of form is realized and organized into a design moodboard.

A moodboard is a collection of images composed in such a way that it serves as a reference for determining the main idea of the product design to be created and functions as a stimulus for providing a specific overview of the overall concept of the work. It is presented as a collection of images that provides a visual representation of the work's concept and serves as an inspirational basis for product design. Like keywords within an image, the design elements in a moodboard should be translated into one or two paragraphs. These paragraphs should briefly and clearly describe the lines, colors, forms, techniques, details, material types, textures, trends, product types, target market, and other elements contained within the moodboard.



Figure 5. Digital Motif Design Moodboard
Source: Luqiani Octa Pratiwi (2024)

The moodboard in Figure 5 presents symbols that serve as references for realizing the motif design, as well as a color palette representing the color tones. The presence of color functions as a symbol or represents something associated with tradition or commonly established patterns (Kartika, 2016, p. 47). The moodboard also contains visual representations of motif forms and reference images derived from Kalimantan's distinctive cultural heritage. In addition, it includes a pattern design realized in a garment design on a model, along with a flat motif design serving as the visual background of the moodboard.

Design Stage

The second stage is the design stage, in which the researcher develops the conceptual ideas generated during the previous stage. At this stage, the design is based on the analysis that has been formulated, followed by the visualization of ideas through alternative sketches. The selected sketch is then established as a reference for the design or technical drawing used in the realization process (Gustami, 2007, p. 333).

The design stage involves ensuring consistency between the concept and the visual form of Kalimantan's ornamental motifs. This is important because motifs are generally compositions of forms or visual expressions derived from nature (Sunaryo, 2009, p. 14). The creative process begins with the development of motif sketches until the final motif is produced. The motif is formed and colored using Adobe Illustrator and is subsequently applied to garment designs using CLO-3D software. The development of the motif follows batik design principles, which include the main motif, supporting motifs, and *isen-isen* or supplementary motifs. The design process begins with the exploration of conceptual ideas and the creation of stylized Kalimantan ornamental motifs.

Table 2. Creative Process of Motif Design

No.	Exploration
1.	Fern, Hornbill, and Kancet Papatai Dance



Polystichum setiferum fern



Hornbill

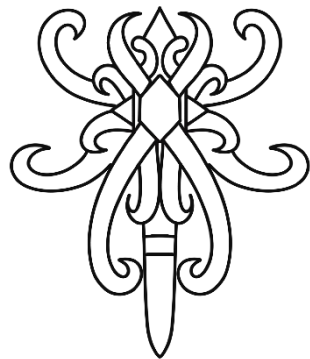


War Dance or Kancet Papatai Dance

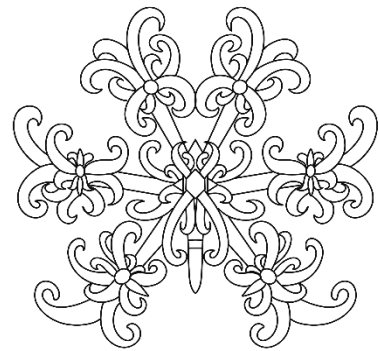
The transformation of forms that occurs in motif design represents a creative process derived from the researcher's imagination. These visual forms are subsequently processed through imaginative exploration to produce new visual forms that reflect the creator's personal expression (Haidarsyah, 2021, pp. 89–98).

2.

Main Motifs



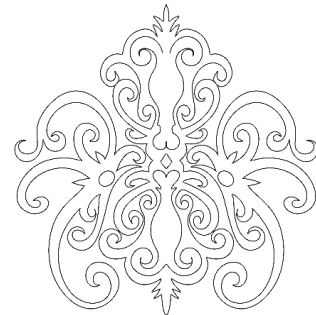
Initial sketch of Motif 1: *Polystichum setiferum*
fern



Creative result of Motif 1: *Polystichum setiferum*
fern



Initial sketch of Motif 2: Hornbill



Creative result of Motif 2: Hornbill

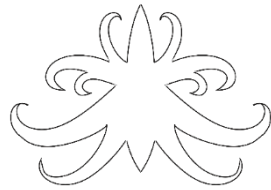


Initial sketch of Motif 3: Kancet Papatai Dance



Creative result of Motif 3: Kancet Papatai
Dance

3. **Supporting Motifs**



Initial sketch



Creative result



Initial sketch

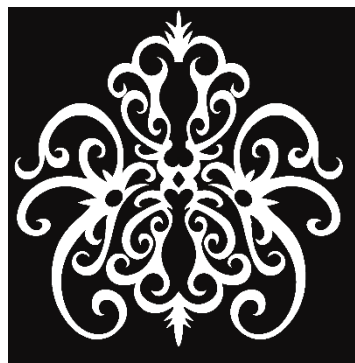


Creative result

4. **Coloring of Main Motif Designs**



Motif 1: *Polystichum setiferum* fern



Motif 2: Hornbill



Motif 3: Kancet Papatai Dance

4. **Coloring of Supporting Motif Designs**



Supporting motif design 2



Supporting motif design 3

The data presented in Table 1 consist of a collection of designs documenting the stages of motif design development using digital media, specifically Adobe Illustrator software. The process includes the creation of three (3) motif designs, which are divided into: 1) main motifs, 2) supporting motifs, and 3) complementary motifs. All motifs produced are inspired by Kalimantan's ornamental patterns; therefore, the motifs created represent personal interpretations that are realized into motif designs. After the overall motif forms have been established, the designs are subsequently visualized as motif patterns.

Realization Stage

The third stage is the process of realizing the design in greater detail and with color. This process involves the use of various tools and features in Adobe Illustrator, such as digital brushes, layers, blending modes, and various texture effects. The researcher experiments based on the moodboard concept to create digital motif design patterns. Outline and repetition of the fern, hornbill, and Kancet Papatai Dance motif patterns.

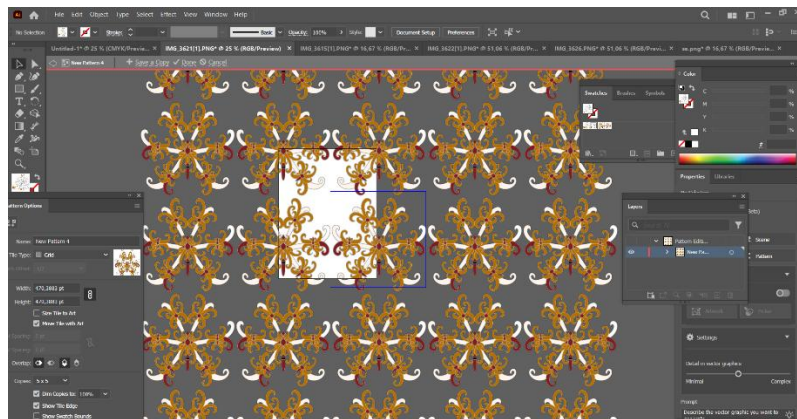


Figure 7. Visualization Stages of the Digital Fern Motif Pattern
Source: Luqiani Octa Pratiwi (2024)

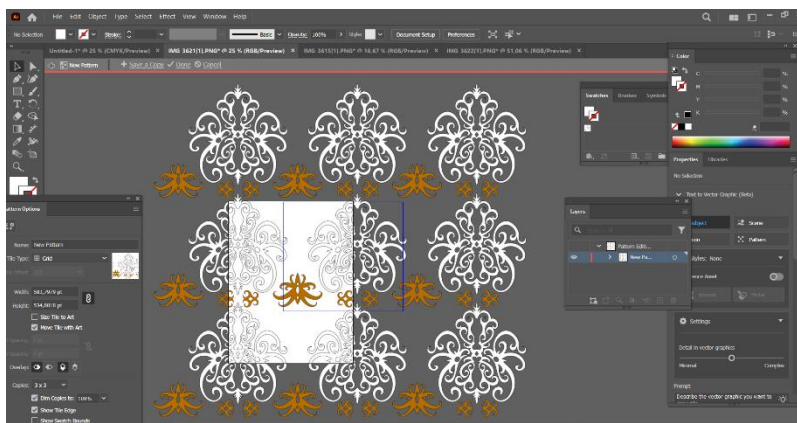


Figure 8. Visualization Stages of the Digital Hornbill Motif Pattern
Source: Luqiani Octa Pratiwi (2024)

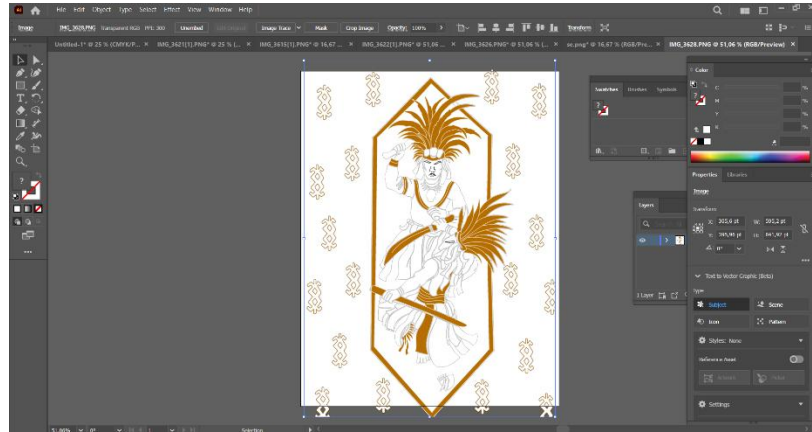
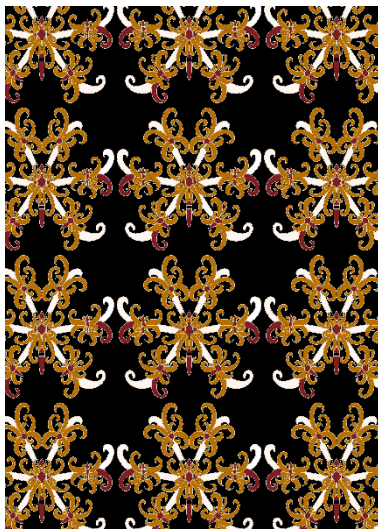


Figure 9. Visualization Stages of the Digital Kancet Papatai Dance Motif Pattern
Source: Luqiani Octa Pratiwi (2024)

Figures 7, 8, and 9 illustrate the documented process of motif formation using an initial pattern. The purpose is to enable the design to be repeated during the process of creating the motif pattern. The arrangement of the initial motifs is also designed so that, when repeated and applied to materials of any size, the motif pattern remains continuous without visual disruption.

Motif pattern design 1



Motif pattern design 2



Motif pattern design 3



Figure 10. Visual Pattern of Digital Motif Design
Source: Luqiani Octa Pratiwi (2024)



Figure 11. Garment Design Hanger for Look Creation
Source: Luqiani Octa Pratiwi (2024)

Presentation Stage: Application of Motif Design to Products

The final stage involves the application and implementation of the motif design onto the final product. The Kalimantan motif designs that have been created are applied to fashion products, such as fabrics and women's dresses.

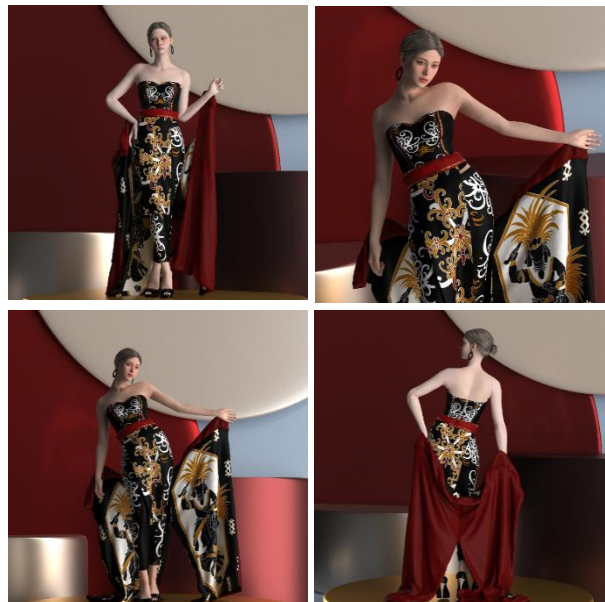


Figure 12. Application of Garment Design to a Model Using CLO-3D Software: (a) Front View, (b) Close-Up View, (c) Side View, (d) Back View
Source: Luqiani Octa Pratiwi (2024)

CONCLUSION

The development of Kalimantan motif designs through digital media demonstrates that the integration of aesthetics and technology can provide new opportunities for the development of traditional visual forms. The use of digital technology enables the exploration, transformation, and visualization of traditional motifs in a more flexible and efficient manner while maintaining their cultural identity.

The application of the Practice-Led Research method provides a systematic framework for developing motif designs, beginning with the pre-design stage, followed by design, realization, and presentation. Through these stages, the researcher was able to explore visual elements derived from Kalimantan's cultural heritage, including the *Polystichum setiferum* fern, hornbill, and Kancet Papatai Dance, and transform them into new motif designs.

The use of Adobe Illustrator facilitates the process of developing motif forms, arranging patterns, applying colors, and producing visual variations. Meanwhile, CLO-3D supports the visualization of the resulting motifs when applied to fashion products. The combination of these technologies provides greater flexibility in experimenting with motif composition and its application to various forms of fashion design.

The resulting designs demonstrate that digitalization does not necessarily eliminate the cultural identity embedded in traditional motifs. Instead, digital media can serve as a means of reinterpretation that allows traditional visual elements to be presented in contemporary forms. This process opens opportunities for the development of innovative Kalimantan-inspired designs while maintaining their aesthetic and cultural values.

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