

Bamboo: A Batik Block Alternative to Aesthetically Produce Batik Pattern Design

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Abstract. Bamboo could substitute batik blocks for pattern creation as the middle and cross-sections of the bamboo stem structure (vascular section) spread across the trunk and reveal novel aesthetic values in batik pattern designs. This study aimed to evaluate the design pattern produced by *Bambusa Blumeana* (thorns bamboo) and *Gigantocha Albociliata* (honey bamboo) with Clive Bell's and Roger Fry's theory of formalism. Specifically, formal aesthetic characteristics relied on the art design elements and principles within bamboo stem structures through lines, appearances, textures, and diversity for a balanced, orderly, and harmonious pattern. Resultantly, bamboo as a batik block produced intriguing batik pattern designs, denoted an artistic identity, and determined the various trending textile pattern designs.

Keywords: Aesthetics, Bamboo, Pattern design, Alternative, Block batik

1 Introduction

Batik denotes one of the most unique and popular handicraft products among the Malaysian community. The technical evolution or innovation derived from plant-based patterns have occurred since the pre-historic eras. As such, batik practitioners understand the use of materials and techniques to produce appropriate batik patterns based on available technologies. In Norlelawaty et al. [1], natural environmental resources are inextricably linked to individual lives in producing novel inspiration following the current needs. As such, this study identified bamboo as an alternative material to produce batik pattern blocks with bamboo structures using the batik method. Design pattern manipulations were derived from empirical development by examining bamboo materials to demonstrate aesthetic art design values. Through art and design elements and principles, the resulting pattern designs proved highly relevant with creative and interesting aesthetic values.

Other influencing factors in this study originated from Mohd Azhar Samin et al.'s [2] study on batik alternatives following the potential outcomes in the batik design method. The

essentiality of the local batik industry necessitates a unique method for or examination of modern batik patterns in the current batik industry. Therefore, this research primarily aimed to identify other natural alternatives (batik blocks) for batik patterns. Notably, batik designs require aesthetic value appreciation for value-added textile designs. The entire research guideline followed the theory of formalism to examine the visual batik pattern designs from alternative materials (bamboo). This research significantly facilitated researchers to perceive the artistic designs of identified patterns and determine batik textile pattern acceptance and recognition.

2 Background of the Study

The advent of textile design information and artistic sentiments have influenced studies on batik textile design demand. In Hekkert [3], aesthetics denotes a sense of pleasure acquired from sensory perceptions that differ from other experiences (meaning construction and emotional responses). Thus, formal artistic and analytical research revealed that the expression factors of thoughts, materials, techniques, and cultural contexts in society influenced contemporary batik design production from bamboo materials.

2.1 Batik Pattern Design

Designing patterns or motifs imply one of the primary visual elements in batik production. Typically, motifs are crafted and developed as design patterns that decorate batik art designs. Designers are normally inspired by the environment, such as natural flora and fauna to establish creative batik art patterns. Therefore, every applied batik concept originated from the relationship between pattern design, society, culture, and natural surroundings. In Zamrudin Abdullah et al. [4], the relationship between creative concepts and comprehension of batik art production could explain mind-based values and designers' experiences that were influenced by physical life forms in personal environments.

2.2 Evolution of Batik Block

The batik block (bamboo, stone, and wood) evolution was associated with the surrounding plants in pre-historic eras. Stone blocks do not represent the stone age but rather emphasise stone surfaces on which the batik motifs are carved. The stone is pre-heated to a specific degree of heat. Colouring is then applied and positioned on a white cloth. The heat from the stone immediately dries the dye to avoid seepage into other fabric parts following Azah [5]. Based on Norlelawaty et al.'s [1] findings, local technological evolution and innovation in batik block-making were perceivable following the technological development chronology. Various block types were utilised by earlier practitioners to produce distinct patterns and motifs on fabric surfaces.

2.3 Bamboo

As a natural resource, bamboo is widely utilised in craft products and interior decoration items. Public viewpoints of bamboo as a weak and cheap plant-based product is no longer pertinent as bamboo denotes a more productive material following Fendi Ahmad Shah Amir

Syah [6]. Bamboo materials are locally associated with handicraft products created in rural and small industries with low technological levels and highly skilled labour. Experiments with bamboo cut into batik blocks must be observed to determine design pattern suitability. The batik block patterns produced through current bamboo structures must also be assessed with batik-making methods by modern batik manufacturing sectors.

3 Objectives of the Study

Examining the aesthetics in batik block pattern designs with bamboo (alternative material) as a stamping tool led the researchers to highlight three essential study objectives:

- (i) To identify the aesthetics of bamboo structure design patterns as batik textile design patterns;
- (ii) To explore the formal aesthetic characteristics in producing bamboo-based batik patterns with specific elements and design principles (lines, appearance, colour, texture, and variety);
- (iii) To explore the theory of formalism by examining bamboo-based in batik pattern designs.

4 Theoretical Framework: Purpose and Function

This research employed the theory of formalism to examine the aesthetic acknowledgement of bamboo-based batik patterns.

4.1 Theory of Formalism

In Robert Atkins [7], the term 'formalism' originated from 'form' that represented 'formal' work quality, such as the elements converting work or its shape (appearance, size, structure, scale, composition, and colour). Formalism depicted a significant position or artwork aspects, such as form, means of production, and wholly visual aspects compared to narrative content or its relationship to the tangible world. Thus, formal critics would emphasise the quality of colour, brush strokes, shapes, lines, and composition when drawing.

Following Atkins [7], formalism is generally related to modern art and the three art theory founders: Roger Fry, Clive Bell, and Clement Greenberg. The primary idea in Bell [8] and Fry [9] involved aesthetics where only the existing "essential form" was examined as the soul of the visual art form. With significant forms, individuals could evaluate art to explain the distinct features following aesthetic experiences that represented artwork autonomy (Braembussche [10]). Braembussche also implied Bell's and Fry's theory of form to resemble contemporary perspectives where visual art encompassed artistic processes involving formalism, technical nature, and artwork aesthetics. Both art critics opined that specific elements, such as line, shape, and colour determined formal artwork quality.

Bell [8] elaborated that artwork appreciation must relate to past experiences, knowledge, and emotions that potentially impact personal interests. The only internal or intrinsic criteria deemed essential to formalism is artwork form (artistic elements and principles) compared to

content. Specifically, artwork evaluation could only correspond to formal properties following Braembussche [10]. Parallel to Zamrudin Abdullah et al. [4], formalistic features encompass specific elements: lines, appearance, tone, shape, space, composition, perspective, and colour. Integrating formalistic elements as a design concept potentially produced motif or design patterns. The optimal utilisation of artistic elements relied on designers' comprehension level in selecting and arranging formal images for creative batik design patterns. Figure 1 below presents the theoretical study framework.

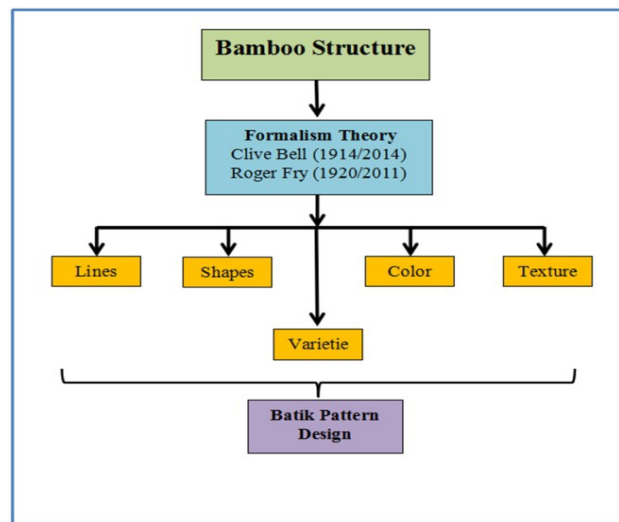


Figure 1: Technical framework for batik pattern design based on bamboo structure










5 Research Methodology

A thorough elaboration of each research approach is presented in the following sections: methodology description, research sites, subjects or samples, instruments, research processes, and data analysis. This qualitative research involving case studies aimed to examine the material quality and structure through the research object. Various cases were simultaneously examined as part of the research. Meanwhile, the study sampling corresponded to the researchers' selection.

Technique and material selection and the structuring of design and art principles and elements were formally more creative following the researchers' aspirations. A simple and systematic method was used to identify aesthetic values in a contemporary batik block art design. The study subjects encompassed two bamboo species: *Bambusa Blumeana* (bamboo thorns) and *Gigantocha Albociliata* (honey bamboo) (see Table 1). In the research context, the selected bamboos were determined by the trunk structure based on the bamboo trunk girth (diameter), bamboo wall thickness, and twigs or different branches. The bamboo structure samples were categorised into three different sizes (large, medium, and small based on culm diameter,

wall thickness, and branching) and utilised as a study material to produce bamboo motif pattern designs with the batik process.

Table 1: Visual appearance of bamboo structure

Types of Bamboo	Bamboo structure	Three different sizes (S,M,L)	Samples of bamboo structure/ three different sizes (S,M,L)		
			Small	Medium	Large
 Bambusa blumeana <i>(buluh duri)</i>	Culm diameter	S - 1.2 cm M - 2.6 cm L - 3.4 cm			
	Culm wall thickness:	S - 6 mm M - 7 mm L - 11 m			
	Branching				
 Gigantocha albociliata <i>(buluh madu)</i>	Culm diameter	S - 1.2 cm M - 1.9 cm L - 2.3 cm			
	Culm Wall thickness:	S - 9 mm M - 10 mm L - 18 mm			
	Branching				

The studio practice method was utilised with experimentation to identify suitable bamboo types in producing batik blocks. The method also was performed to identify appropriate bamboo structures as batik block and motif patterns (small to big circular bamboo stems). Twigs were also processable and effect-oriented structures in batik-making with wax application on cloth surfaces. The twigs were arranged based on spontaneous pattern effect suitability, such as various lines on motif design patterns. Technique and material selection and the structuring of design principles and elements were formally more creative based on the researchers' aspirations.

5 Data Analysis

5.1 Research on Producing Batik Motif Pattern Design from Bamboo Structures

Two bamboo types, *Bambusa Blumeana* (bamboo thorns) and *Gigantocha Albociliata* (honey bamboo), were utilised as study materials in batik motif production. The nature of the bamboo stem structure, such as trunk wall thickness, bamboo trunk diameter circumference, a small-size diameter of circular or cylindrical branching section, straight and vertical bamboo twigs,

and empty (circular or cylindrical) hollows enabled the researchers to produce pattern or motifs through the batik process with bamboo structure application. Although the bamboo types were selected based on structural similarities, the stem wall thickness was different. For example, *Gigantocha Albociliata* is thicker than *Bamboosa Blumeana* while the diameter of *Bambusa Blumeana* is bigger than *Gigantocha Albociliat*.

Based on the experimental outcomes of suitable bamboo structures for batik block motifs, this study examined batik motif patterns following the design principles and elements on fabric surfaces by scribing or applying hot batik wax. The batik motif pattern design samples and wax application could be observed based on the chosen bamboo structure. The overall motif appearance from the study material corresponded to cylindrical or circular shapes and vertical lines based on the bamboo stem structure research (see Tables 2 and 3).

Table 2: Part of bamboo structures selected as batik block for pattern design through stamping technique


































	Bamboo structure	Three different sizes (S,M,L)	Samples of bamboo structure / three different sizes (S,M,L)			Samples of bamboo structure / Branching			
			Small	Medium	Large				
<i>Bambusa blumeana</i> (<i>buluh duru</i>)	Culm diameter	S - 1.2 cm M - 2.6 cm L - 3.4 cm							
	Culm wall thickness	S - 6 mm M - 7 mm L - 11 mm							
			Samples of batik block pattern design motifs from bamboo						
Samples of batik block process									
									

Table 3: Part of bamboo structures selected as batik block for pattern design through stamping technique

	Bamboo structure	Three different sizes (S,M,L)	Samples of bamboo structure / three different sizes (S,M,L)			Samples of bamboo structure / Branching		
			Small	Medium	Large			
Gigantocha albociliata (<i>buluh madu</i>)	Culm diameter	S - 1.2 cm M - 1.9 cm L - 2.3cm						
	Culm wall thickness	S - 9mm M - 10 mm L - 18 mm						
			Samples of batik block pattern design motifs from bamboo					
	Samples of batik block process							

5.2 Study on Producing Batik Block Pattern with Wax Application Technique and Batik Colouring

The study outcomes demonstrated some suitable structures as batik block motifs and analysed batik block designs following specific principles and elements on fabric surfaces with batik colouring techniques and processes. Notably, technical and formalistic aspects denote the backbone of each batik design. The effectiveness of utilising artistic and subtle elements regarding quality and technicality depended on designers' comprehension level. The understanding facilitated formal image selection and arrangement to produce the compositional unity of pattern designs. In Figure 1, batik pattern design styling and layout highlighted the motifs resulting from the initial study on formalistic elements in batik pattern designs (lines, appearances, spaces, and colours). Designers would then produce a combination of formalistic elements as a motif image or subject pattern design.

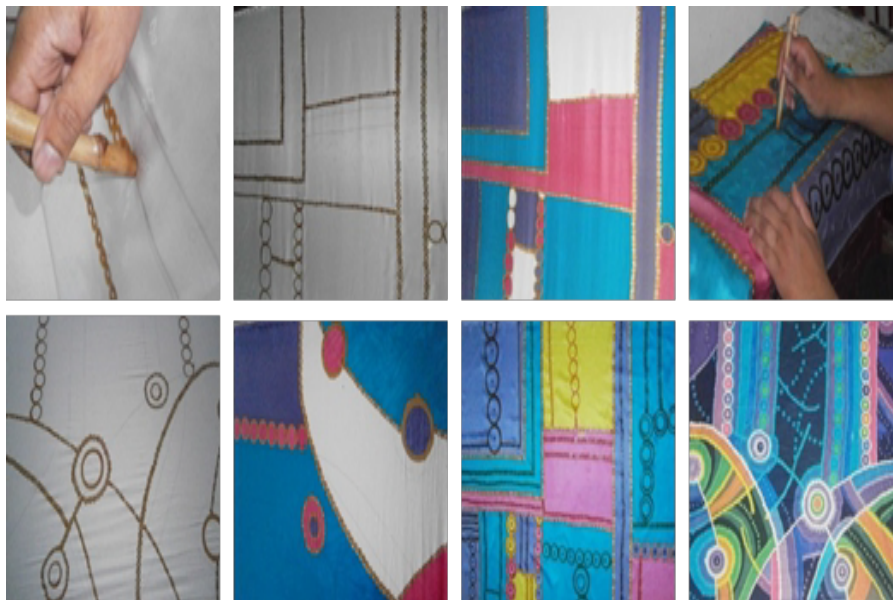


Figure 1: Process of designing pattern of batik blocks through stamping technique and colouring

The batik pattern composition or layout in batik art design harmoniously arranges the motif elements and portrays designers' diversity in direction, motif size, colour, vertical arrangement, and multi-directional patterns by understanding the design principles, specifically batik pattern design. The composition also denotes one of the key formalistic elements for creative pattern design processing. Design composition must be holistically produced with a sound understanding of the design elements and principles for contemporary batik patterns. The formal elements and principles of batik pattern designs were created through aesthetic elements (lines, motifs, appearances, space, colours, braids, arrangements,

harmony, and diversity) to produce the batik block patterns in Figure 2.



Figure 2: The batik block pattern design outcomes through batik making processes (stamp or impression techniques) with bamboo materials

6 Conclusion

Overall, the study objectives were attained through experimentation on several empirical processes with the research materials: bamboo structures involving twigs and bamboo stems (see Table 1). The twigs and bamboo sticks were selected based on several sizes (see Tables 2 and 3) to exhibit the effects of batik motif patterns through stamping

methods and batik wax on fabric surfaces. Spontaneous, thick and thin, and short and long line motifs were duly produced. Rounded or cylindrical motifs and points could be produced with various sizes based on the bamboo rod sizes and establish pattern design suggestions for subsequent processes.

Following Figure 1, the subsequent study results produced batik pattern block designs through the motif study outcomes. Pattern designing processes were executed following specific elements and design principles to develop batik pattern block processes and identify compatible motifs that matched the batik pattern block designs. Following Figure 2, the study outcomes were successfully generated through designers' creativity.

As a tool to create batik pattern blocks, bamboo material structures functioned as an alternative in the batik industry, a source of exposure and introduction to batik industry practitioners, and natural material development in art communities. Current experimental measures on individual perception and aesthetic material appreciation (as a substitute for batik pattern design) proved necessary for material adaptation. The novelty, beauty, and subtlety of batik motif blocks could be converted through material design and equipment innovations based on current social demand. This research could strengthen the batik industry and enable batik production to become one of the most popular and productive craft products in Malaysia. Summarily, this research strived to offer insights into contemporary batik motif utilisation and continued industrial conservation among field experts, scholars, designers, entrepreneurs, and local batik users.

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