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Pattern Grading Design for Women's Batik Fabric in Terengganu, Malaysia: A Preliminary Study

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Abstract

The Malaysian batik manufacturing industry is seen as an industry that has a contributor to the national economy. However, to maintain and increase the Malaysian batik economy, batik fabric manufacturing must move in line with the current manufacturing methods and technology. Therefore, the existing batik fabric needs to be improved in terms of manufacturing, including pattern grading design. This study aims to identify the preliminary analysis of the common pattern grading scheme for women's existing batik cloth in Terengganu, Malaysia. In order to gather data for this study, observations and interviews were used as the approach. Eight batik experts were interviewed for the study, and three batik markets and craft fairs in Terengganu were chosen for observation. The findings indicate that the current batik fabric needs to be developed into a pattern grading design to keep up with modern techniques and technology while minimizing the amount of extra cloth disposed of.

Keywords: Pattern Grading Design, Existing Batik Fabric, Batik Design

Introduction

The history of batik began in the 12th Century on the Javanese islands, and it eventually expanded throughout Nusantara, including the Malay Peninsula. In the early 20th Century, batik production began and grew, particularly in the states of Kelantan and Terengganu (Arney, 1987). Batik is one of the distinctive handicrafts that Malaysians particularly value (Lias & Abd Hamid, 2020). The batik industry in Malaysia is divided into four categories: Batik *Blok*, Batik *Tulis*, Batik *Skrin*, and Batik *Pewarnaan Asli*, each with its specialties and characteristics (Hassan et al., 2018). These Javanese terms, *ambatik* or *tritik*, are thought to have inspired the term batik. "Creating small dots" is the meaning of the suffix *tik* in each word. Currently, two types of production techniques that dominate the batik business in Malaysia are hand-drawn batik (batik *tjanting*) and batik stamp (batik *terap/blok*) (Shaharuddin et al., 2021). The majority of corporate factory batik in Malaysia was discovered in Kelantan and Terengganu (Mahdzar et al., 2013). A few progressive arts and design graduates led a push to develop a new type of batik to shape the Malaysian identity, and batik yardage became a recognized format in the batik cap (stamp batik) sector (Yunus, 2011). Batik

patterns span from swirls and abstract patterns to floral motifs (Chik & Lokman, 2006). The use of bright colors and larger and bolder motifs has been implemented following the rapid changes in our local industry to meet demand (Noorizan et al., 2015). Due to the pattern's appeal and versatility for both formal and casual occasions, batik is not only worn in Malaysia by Malays but also by non-Malays. Therefore, the demand for batik is increasing from time to time and this situation gives a good picture of improving the country's economic sector (Khairi et al., 2018). Malaysian batik is one of the world's most famous textile handicrafts, and tourists frequently buy it as a souvenir (Rosman et al., 2021). There are various interesting batik fabric designs produced in the market such as batik *sarong*, batik *pasang*, pareo, *kemeja* batik and *baju kurung* batik. Scarves, caftans, skirts, and children's clothing are also produced from them. Batik cloth is hand-made, therefore no two pieces are exactly same. However, most batik producers and marketers lack the courage to try out novel materials, styles, and marketing strategies for their goods (Chik & Lokman, 2006)

a) Batik Pattern Grading- Manual

Pattern grading is a method used by garment makers to create designs pattern for ready-to-wear clothing in various sizes. A pattern clothing is graded when an increase or decrease is made to a specific design to make each new pattern in another size larger or smaller (Schofield, 2007). In the garment industry, pattern grading is commonly done with a medium size (M) since it makes it easier to maximize the pattern to big (L) sizes or minimize it to small ones (S). This grading pattern has two goals: (1) operational management to guarantee that production is carried out efficiently and effectively, and (2) pattern approaches to ensure that the proper pattern is obtained quickly (Cooklin, 2003; Marniati, 2020). In the batik industry, there is no specific pattern grading design size for batik fabric. It is commonly designed to follow the free size and general batik motif placement. In general, the Batik fabrics are either in four-meter cut for women's clothing (usually for the Baju Kurung or Kebaya) or two-and-half meters for men's shirts (Chik & Lokman, 2006). At the same time, the majority of hand-drawn silk items for women's clothing are four meters (4.5 yards) in length. They are created specifically for tailoring into traditional Malay clothing (Yunus, 2011). For women's existing batik fabric (Baju Kurung or Kebaya) is divided into five main motif placement parts, which are 1 part for the bodice front, 1 part for the bodice back, and two sleeves (right and left), and 1 part for a skirt. Besides, for men's existing batik fabric shirts, there are six main motif placement parts. It is two parts for the front bodices (right and left), 1 part for the bodice back, two parts for the sleeve (right and left), and 1 part for the collar and cuff.

b) Computer Aided Design (CAD) Batik Pattern Grading

In the fashion and textile industry, the use of computers has opened up tremendous prospects for innovative designs and increased efficiency as per changing lead times (Singh & Singh, 2017). The use of computers is very important in the pattern grading design process, especially the use of CAD software. CAD is more advantageous in the rapid change of any design, and it is possible to use more applications on pattern grading design for garments and textiles. Furthermore, since that pattern grading design of various sizes and making arrangements before the marker-making process require more manpower and time, it is desirable and important for CAD systems to be advantageous in all these steps, which can reduce manpower and time (Tabraz, 2017). Mulyanto et al (2019) have presented a methodology of pattern grading design and motif placement for batik *sanggit* in the form of a short-sleeved shirt. Theoretically, the suggested approach could address the aesthetic issue

with contemporary batik production, especially concerning creating batik in the *sanggit* style. The theoretical basis for producing batik *sanggit* in short-sleeve shirt style is the combination of pattern design and motif placement. The goal is to carefully flip and mirror the motif until it reaches the junction of the harmonic motif before inserting it into the blocks of the pattern patterns. By extending the motif over the pattern design area that gives the motif room to breathe, the harmonious motif junction can be achieved. The theme would still be appropriate even though it was in a different pattern block. In addition to assisting customers in choosing the type and variety of batik, the potential and effectiveness of using CAD applications can be used and help improvements in speeding up the manufacturing batik pattern grading design style process. New motif designs can also be created using CAD applications that are more creative, varied, and innovative. So, the use of this pattern grading design method is seen to have a good impact on the Malaysian batik industry if it is adapted to existing batik fabric. Therefore, the purpose of this study is to investigate a preliminary study into the usage of a pattern grading design approach on Terengganu's current common women's batik cloth.

Methodology

In this study, the purposive sampling technique was applied for interviews. The interview session was conducted with several batik specialists who are directly involved in the field of batik/ textiles. It is important to consult with them to understand the real situation of the batik industry in Malaysia, especially in manufacturing existing batik fabric makers for women's clothing. From this interview, the researcher captures a few findings that can help the research move forward according to its research objective. There are eight respondents interviewed in Terengganu. However, the interview is conducted informally, like a casual conversation. Some questions are added in the conversation if needed to clarify the problem. These interviews were voice recorded and transcribed into word. It takes approximately 10-30 minutes to complete the whole interview

In this study, observation was used to collect information for pattern grading designs on already-available batik fabrics. The observation takes place in selected batik market at Pasar Payang, Noor Arfa Craft Complex, and also at Festival Kraf Kebangsaan 2022 in Kuala Terengganu. This method is important for the researcher to see the current state of batik fabrics, grading size, technique, and pattern placement on existing batik fabrics in the market. In addition, these observations were recorded through photographs and videos.

Result & Discussion

The researcher discovered that the current batik fabrics produced are 4 meters and 4 meters and a half according to demand, with the width of the fabric being 45 inches based on the results of interviews with eight batik specialists, as well as the results from the observation made at Pasar Payang Kuala Terengganu and Noor Arfa Craft Complex and also at Festival Kraf Kebangsaan 2022. Besides, there is no specific pattern grading design size such as S, M, or L; instead, it follows the free size. Also, in terms of placing the pattern design on the batik fabric is like a regular placement and full pattern.

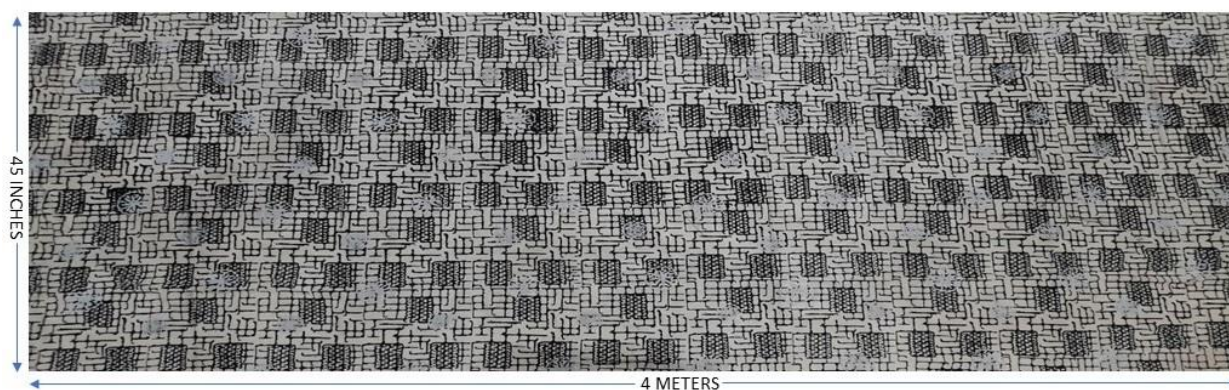


Figure 1. Sample of women's existing batik fabric (Blok Stamping Technique) (Shukri, 2021).



Figure 2. Sample of women's existing batik fabric (Tjanting Technique) (Shukri, 2021).

The sample of women's current batik fabric (Blok Stamping technique) on cotton poplin materials that is now available on the market is shown in Figure 1. This sample of batik fabric is 4 meters long and 45 inches wide. Besides, it has a full pattern and no pattern grading design placement. There will likely be a lot of excess fabric if producing women's clothing because this block batik fabric has the same repetition pattern and does not need to be cut according to the tjanting batik pattern layout. While Figure 2. shows the sample of women's existing batik fabric (Tjanting Technique) on cotton viscose material that is on the market. This batik fabric sample has a length of 4 meters and a width of 45 inches. It is divided into two parts one part for the shirt, which includes two front and back bodies as well as right and left sleeves, and one part for a skirt. Additionally, Figure 3 shows the layout of women's pre-existing batik fabric (regular placement design), which batik designers use to create 4 meters of batik fabric.

Batik fabric layout is divided into five main motif placement areas: the front of the bodice, the back, two sleeves (on the right and left), and the skirt. The yellow part (in about 15% of the layout) is the excess part of the fabric, which is not normally used other than a little used for the neck lining. As a result of *baju kurung modern* with bias A line skirt is the preferred style of women's batik clothing in Malaysia. Since the *baju kurung modern* with A line skirt is made from 4 meters of batik fabric, there will be more fabric leftover in the sleeve, bodice, and skirt layouts since the modern version of the *baju kurung* is curved and uses less fabric than traditional and *kain ombak beralun* versions. By creating a pattern grading design method, it will probably be possible to use less fabric while making a *baju kurung modern*. For instance, instead of using 4 meters of batik fabric for an M size, 3 meters will be used instead. As a result, it has decreased by 25% from the norm.

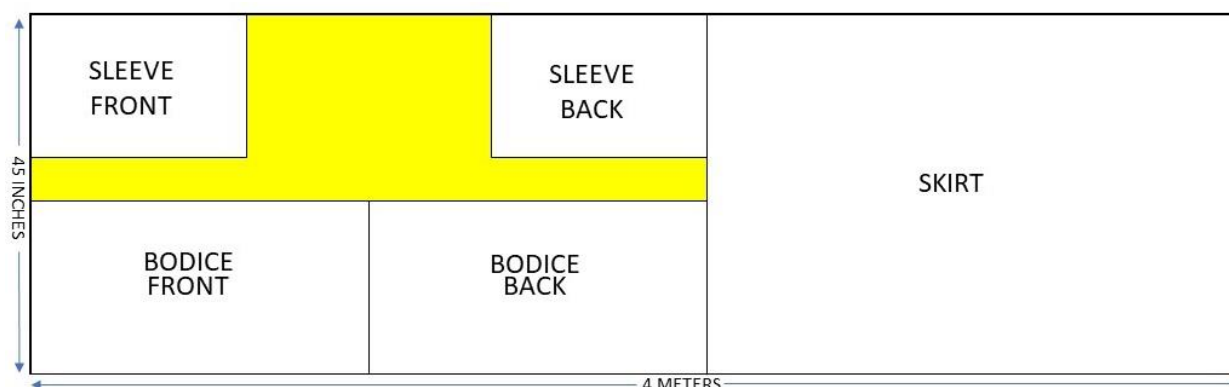


Figure 3. Layout of women's existing batik fabric (regular placement design) (Shukri, 2021).

The results from the interviews regarding the women's current batik cloth situation and pattern grading design are summarised in Table 1. This overview includes information on the opinions on pattern grading design on batik fabric design, motifs, techniques, colors, and materials that batik makers typically use to produce batik, as well as information on the kinds of apparel that consumers select as current trends. Additionally, Table 2 presents the data summary from the observations made at two chosen Terengganu batik markets and one craft fair. The themes, techniques, colors, and materials frequently employed by batik designers in their work as well as the types of clothing on the market, are all included in this observation summary.

Table 1

Result summary from the interview sessions

Keywords	Findings
Existing batik fabric (measurement)	<ul style="list-style-type: none"> • 4 meters. • 4 meters and half for extra size according to demand.
Pattern grading design / pattern placement	<ul style="list-style-type: none"> • Not follow the grading size. • No specific pattern grading design sizes (S, M or L). • Follows the free size grading design. • Regular Placement.
Pattern grading design method on batik design fabric	<ul style="list-style-type: none"> • Something good • It is necessary • Can save costs. • Can save material. • It is recommended and also supported.
Technique	<ul style="list-style-type: none"> • Tjanting • Blok Stamp • Brush • Digital printing
Motifs and pattern	<ul style="list-style-type: none"> • Full pattern • Flowers • Creeping flowers • Geometry

	<ul style="list-style-type: none"> • Simple pattern • Abstract
Fabrics and materials	<ul style="list-style-type: none"> • Cotton • Cotton Viscose • Crepe CDC • Cotton Primasima • Cotton satin/ silk
Color	<ul style="list-style-type: none"> • Pastel • Bright • Colorful
Type of Clothing	<ul style="list-style-type: none"> • <i>Baju Kurung Tradisional</i> • <i>Baju Kebaya</i> • Current trend <i>Baju Kurung Moden</i>
Batik Surface Style	<ul style="list-style-type: none"> • Digital Printing • Textiles using printed machine

Table 2

Findings from the observations

Observation places	Findings
Pasar Payang Kuala Terengganu	<ul style="list-style-type: none"> • 4 meters for women's existing batik fabric • Regular placement • No specific pattern grading design • Hand draw tjanting and blok stamp technique. • Batik digital is also sold. • Creeping flowers, geometry and full of pattern. • Cotton, Cotton viscose, Crepe CDC • Colorful and bright color • <i>Baju Kurung Moden</i> with <i>kain duyung</i>, <i>kaftan</i>, <i>jubah</i> and <i>baju kebaya</i> with <i>kain lipat batik</i>.
Noor Arfa Craft Complex, Terengganu	<ul style="list-style-type: none"> • 4 meters batik fabric • No specific pattern grading • Hand draw tjanting, blok stamp, brush technique • Many digital batiks are sold. • Geometry and flowers pattern. • Cotton, satin, cotton viscose, linen, crepe CDC • Bright and pastel color. • <i>Baju Kurung moden</i> with <i>kain duyung</i>, <i>baju kebaya</i> and <i>kaftan</i>.

Festival Kraf Kebangsaan 2022, KTCC Mall, Terengganu	<ul style="list-style-type: none"> • 4 meters • No specific pattern grading • Handdraw tjanting, brush & blok stamp • Geometry, flowers and abstract pattern. • A lot of cotton viscose and cotton poplin. • bright and pastel color. • <i>Kurung moden</i> and <i>Jubah</i>
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Therefore, the women's existing batik fabric needs to be implemented into pattern grading design. The use of CAD applications is a technique to create a new approach for pattern grading design to enhance batik designs while lowering the cost of raw materials and the quantity of extra fabric that has to be disposed of, which can support a zero-waste campaign. In order to improve the creation of batik designs, pattern grading is a good idea since it can lower the cost of raw material consumption, save manufacturing time, and other benefits. We can also save material by grading designs following the design or pattern that users would sew. In addition to helping the zero-waste effort, this pattern grading design concept may also help entrepreneurs by encouraging them to evaluate their designs early on before producing batiks.

Conclusion

In conclusion, the researchers discovered that, depending on demand, the existing batik fabrics manufactured were 4 meters to 4 meters and a half long by 45 inches wide. In conclusion, the researchers discovered that, depending on demand, the existing batik fabrics manufactured were 4 meters to 4 meters and a half long by 45 inches wide. This idea of pattern grading in batik design will help decrease raw material consumption costs and shorten the manufacturing process. Besides, it can cultivate the use of current technology, especially CAD applications, to produce batik design methods among entrepreneurs. It can also empower users to know the fabric length that should be used according to their body size. The batik designs and patterns will be placed in a beautiful and appealing style on the clothing. Furthermore, this development can achieve one of the National Creative Industry Policy (DIKN) objectives, which is to develop and leverage technology as a creative catalyst industry. For future research, this study can be continued in the future by making pattern grading designs for women's clothing. This is because the market demand for women's batik clothing is increasing. Nevertheless, this study can also reduce the removal of batik fabrics and motifs on neatly located garments without cut motifs.

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