

Exploration of Jlamprang Batik Motifs using Digital Printing Techniques to Apply Please on Men's Shirt

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ABSTRACT

This research aims to find out 1) the development of the jlamprang batik motif, 2) the application and placement of pleats on men's shirts with the jlamprang batik motif, and 3) the finished results of the exploration of the jlamprang batik motif using digital printing techniques to apply pleats to men's shirts. This type of research is quantitative descriptive. Data collection is carried out using questionnaires or questionnaires. The instrument scale used is the Likert scale rating. The data analysis technique used is average value. This research resulted in a description of the process of developing the jlamprang batik motif, the application and placement of pleats on men's shirts with jlamprang batik motifs, the result was an exploration of the jlamprang batik motif using digital printing techniques to apply pleats to men's shirts.

INTRODUCTION

Batik motifs in each region have different motifs depending on the person who created them, where batik motifs were initially developed, innovated and improved depending on the way the person designed the batik which was adapted to the region in which it was produced. Various types of batik motifs have been produced from the past until now, where these motifs contain ancestral meaning which has animism and dynamism (Amin, 2018). One of the famous traditional batik motifs from Pekalongan City is the jlamprang batik motif.

The jlamprang batik motif is influenced by the Islamic Cultural Society, so it is prohibited to depict living creatures in this pattern. The jlamprang batik pattern elements consist of dots, squares, circles and other shapes that can form geometric shapes. The pattern formed by the jlamprang pattern has a deep meaning and the colors in the jlamprang pattern can be two or more colors.

Gradually, the jlamprang batik motif gradually began to be forgotten. This is because the jlamprang motif is very monotonous and unattractive, so its existence is very rare and almost non-existent on the market. On the other hand, the world has now entered the fourth wave of civilization, namely the creative era. Creativity and innovation activities are the main drivers of economic growth in a country or region in this fourth era. This must be the main focus of a country or region if it wants to compete in the ever-changing dynamics of the global economy (Adi, 2016).

Apart from that, in line with increasingly advanced developments, people are now starting to try to produce patterned fabric using various techniques, one of which is through digital printing techniques. According to Kusumah (2015), textile design techniques using digital methods are one way to produce textile sheets with unlimited capacity. In this modern era, digital techniques are considered more modern and efficient in making textile sheets. This design creates motif designs that are included in modern fabrics. Modern fabrics are those made with free techniques, motifs and coloring and processed digitally using computer technology. This technique has been widely used to print batik patterned fabric by industry and designers.

Industrialization has encouraged the transformation of batik from traditional clothing to modern clothing. Modern batik fashion requires a harmonious combination of motifs in each interlocking pattern block. As a result, it brought about fundamental changes in batik production practices. Modern batik clothing production uses a process of designing, cutting, sewing, and applying fabric manipulation that needs to be carefully considered, because this process can cause several motif harmonization problems.

Pleating has been known throughout human history from the 10th century until now to make special clothing with pleats that look like vertical pleats. The method of making this is by folding the fabric when it is wet and then applying pressure until the fabric dries, so pleats will form in the result. Currently, the pleating technique is favored by famous fashion houses in the fashion world and Vietnam because of its beauty. Designers create clothing collections with the idea of adding pleats to their clothing designs by paying

attention to the final result being functional, practical, and the result can be permanent. Several famous designers from Vietnam such as Lam Gia Khang, Nguyen Minh Cong, and Le Thanh Hoa have used the pleating technique in their clothing products which are made from thick to thin materials (Nguyen et al, 2022: 73).

Nowadays, a man not only needs clothes that look comfortable or protects himself, but also needs these clothes to beautify his appearance and can become a trend that will never fade with the times. Nowadays, clothes really need to be paid attention to so that they can increase the self-confidence of someone who wears them. This situation is exploited by designers to look for loopholes so they can predict and create clothes that look modern. Men's clothing that is often found in malls, offices and campuses such as men's shirts which are used as daily clothing in various models.

The shirt model has been developed with the basic shape of the shirt pattern remaining the same. One of the most important factors that must be met when designing a men's shirt is suitability or adjustment to a man's body shape. The suitability of a shirt depends on the resulting pattern, because the pattern design is implemented based on actual body morphology (Musilova & Nemcokova, 2014). Shirts that are often seen today among the elderly, young people and small children include batik patterned shirts. Today's young people also like to collect various types of batik motif shirts, but they still consider the color, batik motif, and even the model of the batik motif shirt.

The use of batik motif shirts is currently increasing rapidly, designers are required to be able to design and present unique and unprecedented clothing or develop clothing models from before. Like the ones on campus, batik shirts can be seen every day worn by students and lecturers, these shirts still look ordinary and are often seen everywhere, as for shirts in offline and online stores also sell the same thing, as for the use of pleats on shirts men are also still rarely seen. Based on the background description above, to fill the gap, this research aims to research and create the application of pleating on men's shirts with jlamprang sekar batik motifs. This pleating is made by formulating a design and strategy for laying the jlamprang sekar batik motif with pleated variations. The placement of designs and placement of designed motifs can be the basis for further development of batik production in modern clothing, especially for men's shirts.

There have been many previous studies conducted on this topic such as Khalishah (2022), Nguyen et al (2022), Bimantoro (2015), Rifaah (2020), Yuningsih (2020), dan Naufa (2018). However, all of this research is not related to jlamprang batik motif using digital printing techniques for the application of pleating in men's shirt, this research has never been carried out before. This is new and different from previous research.

Therefore, the aim of this research is to describe the development of the jlamprang batik motif and the process of selecting pleated designs on shirts as well as the finished results of exploring jlamprang batik motifs using digital printing techniques for applying pleats to men's shirts.

THEORETICAL REVIEW

Jlamprang Batik Motif

The jlamprang batik motif is a decorative batik variety found in Indonesia, especially in the city of Pekalongan. The jlamprang motif is one of the batik motifs that has elements of composition that are in the form of simple flat-shaped motifs. The geometric concept in motifs such as flat-shaped geometry which includes area and circumference can be found in the jlamprang batik motif (Abdulah, 2023: 37).

According to Insan (2008), in his research entitled "Pekalongan Batik Museum Transforms Jlamprang Motifs into Building Characters" the characteristics of the jlamprang batik motif are as follows: (1) if seen from its shape, the character of the jlamprang motif can be taken as geometric, symmetrical, and regular. (2) The use of bright colors, and contrasting with other colors boldly, so that attractive colors are created. (3) Has an alternating rhythm to give a non-monotonous impression due to the symmetrical shape. (4) Motifs with repetition in the form of dots and geometric shapes. (5) Historically, the jlamprang motif originated from India, brought by Indian traders, which were then developed by the Pekalongan community into a batik motif. (6) Judging from its nature and use, this jlamprang batik motif is often used at official and formal events.

According to Amalia (2021), the types of jlamprang batik motifs found in the Pekalongan City Batik Museum include the Jlamprang Sekar Batik Motif and the Jlamprang Kembang Cengkeh Batik Motif.

The complementary colors symbolize the harmony of social relations among the trading communities on the coast of Pekalongan. The dominant colors in jlamprang batik consist of 5 types, namely red, green, brown, yellow, and blue. These colors show a blend that is characteristic of heterogeneous coastal communities. The philosophy of these colors gives meaning and a sense of calm to the wearer.

The design of the Jlamprang batik motif is famous for its geometric motif shape. The geometric motifs used in this study are found in the main motif and its complementary motifs. According to Naufa (2018), geometric is a shape that has a size or is measured mathematically. Geometric shapes have definite, firm, straight, and regular angular lines. Geometric shapes can represent the balance of a work, both in terms of portion, unity, rhythm, and harmony.

Each element that forms a batik motif can contribute to a complete design, resulting in a visual composition that has aesthetic value that is pleasing to the human eye. These elements are needed for harmony between one and the other.

Digital Printing Techniques

According to Meilina (2022), digital printing technique is a process of printing images directly from media without using plates. This technique is like offset printing, digital printing technique can print on paper, canvas, cloth, synthetic media, and others. According to Meilina (2022), there are 3 types of digital printing techniques, namely DTG (Direct to Garment), direct to textile, and sublimation.

Lipit

Pleating is a fabric manipulation that is formed from the results of folding fabric in the same fabric to form several fabric folds with varying lengths and widths depending on the type of material and design made, these folds can be produced by ironing at a certain temperature to get the right results (Desouky, 2021: 450).

According to Colette (1996) in her book entitled "The Art of Manipulating Fabric", pleats are divided into two groups, namely flat pleats and projecting pleats. Flat pleats are folds that are parallel to the surface of the fabric and are placed horizontally to the side which are arranged systematically.

When pleats are applied comprehensively to men's shirts, these pleats fill the entire shirt and the shape of the pleated structure is visible, thus displaying the characteristics of the clothes. The pleats at the waist down depict the texture of fallen leaves. The pleats attached to the shoulders use accordion pleats that hang down and these pleats add to the appearance of the coat so that it is not boring when worn. Advant Garde style with a white pleating technique as the main color on both the jacket and pleats, this set presents a pleasant impression of cheerfulness. Creating luxury by carrying a geometric block image stacked on top. The intricate block-making technique, reminiscent of the massive stone piles of ancient tribes, inspires new creative inspiration.

Shirt

Men's shirts are one of the clothing items whose production is included in the quantitative production type and the men's shirt industry is one of the industries that receives great attention (Alsakhawy, 2020). Shirts are used for various different occasions, so it is also necessary to choose different shirts such as formal shirts and casual shirts. The elements that form a shirt can be seen from the basic construction of the shirt observed through pattern making techniques. Constructing a casual shirt pattern with long sleeves consists of a collar, yoke, sleeves, cuffs, button openings, pockets, and a back flap.

The finished result of this shirt is seen from the details that can be moved without disturbing the basic part of the clothing structure, such as on this shirt there are details of pleated decorations with a jlamprang batik motif so that it has an aesthetic value in the clothing section. According to Bimantoro's research (2015), on the Dotted-Board Model (DBM) and Extended Local Search (ELS) to optimize the layout of fabric patterns on patterned materials by paying attention to the rules of motif harmony. The fit of clothing is an indicator for assessing the two final results of design and sewing.

METHODOLOGY

This type of research is a type of design development research. The method used to solve and help find answers to this research is the Double Diamond Model. According to Indarti (2020), the double diamond model was first introduced by the British Design Council with a holistic approach to design form, dividing the design process into 4 stages, namely discover, define, develop and deliver.

In data collection instruments, a measurement scale is needed to produce accurate data in the form of quantitative data, so a scale is needed in each instrument, as in this study using a Likert scale. Thee Likert scale is used to measure the attitudes, opinions and perceptions of a person or group of people about social phenomena. The questionnaire that will be distributed in this research uses a Likert scale with gradations from strongly agree to strongly disagree. In answering this research instrument, respondents can put a checklist mark (√) on the list of scales selected according to the question or statement.

The results of the pleat placement analysis are used as a reference for the finished shirt. The technique used is quantitative descriptive data analysis in the form of numbers calculated from the average number (mean) interpreted with descriptions of words. The assessment for the development of the jlamprang batik motif design and the process of selecting the pleated design was carried out online with 25 male respondents with an age range of 17-35 years. Evaluation of the finished design results was carried out offline with respondents consisting of 3 D4 Fashion Design lecturers at Surabaya State University and 20 men with an age range of 17-35 years using instruments that had been validated by 2 lecturers.

RESULTS

Results of the Development of the Jlamprang Batik Motif

The process of developing the jlamprang batik motif goes through several stages. The creation stages are adjusted to the flow of the research method taken, namely the double diamond model. In the first stage of this method, the researcher found the jlamprang sekar batik motif as a source of ideas and then analyzed the batik motif. The second stage is to create a moodboard by collecting images of jlamprang batik motifs, images of geometric shapes, images of shirts, images of pleats that already exist. Next, from the moodboard, the color plan used to create the jlamprang batik motif and shirt is determined. The next stage is to create a design by stylizing the existing jlamprang batik motif, resulting in a new motif that has symmetrical elements with geometric shapes.

The finished design is then assessed by respondents using the instruments that have been prepared and continues with the data collection stage. After carrying out an assessment by collecting data by 25 men with an age range of 17-35 years to assess the design. The assessment results for each aspect can be seen from the following diagram:

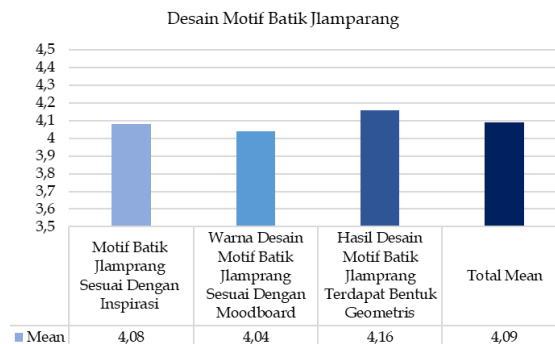


Figure 1. Motif Development Results

Obtaining design scores with indicator 1 "jlamprang batik motif in accordance with inspiration" obtained a mean of 4.08 (good). The score obtained from indicator 2 "the color of the jlamprang batik motif design matches the moodboard" obtained a mean of 4.04 (good). The score obtained from indicator 3 "the finished jlamprang batik motif has geometric shapes" obtained a mean of 4.16 (good). From the diagram above, it is clear that the finished result of the jlamprang batik motif design from the three indicators obtained an overall mean of 4.09 (good), therefore the jlamprang batik motif design is worthy of being realized.

The assessment of brown as the main color of men's shirts can be seen in the table and diagram as follows:

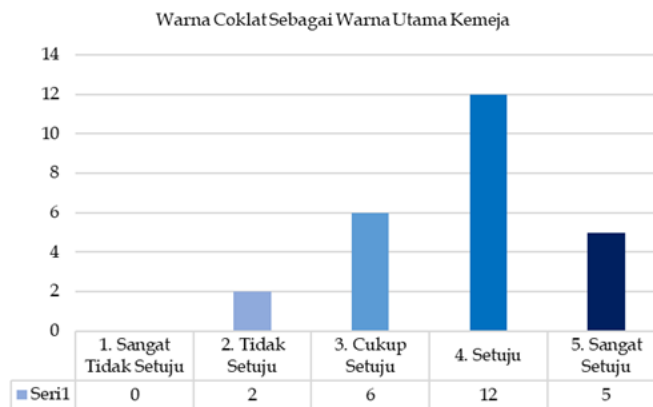


Figure 2. Assessment of Brown Color in Shirt Design

From the diagram above, it is clear that brown as the main color of the shirt has a mean of 4.08 (good), therefore the brown color in the jlamprang batik motif shirt design is worthy of being realized.

Results of the Development of the Jlamprang Batik Motif

The application and placement of pleats also need to be paid attention to in order to create a pleated men's shirt with a jlamprang batik pattern. After the jlamprang batik motif was finished, the researchers then made fragments by making pleats. There were 3 types of pleats that the researchers made, such as one-way pleats, facing pleats, and opposite direction pleats. Three types of 3 pleats are made and then 1 type of pleat will be selected which gets the highest mean value from the results of the respondent's data. The following is a diagram of the results of the selection made by respondents.

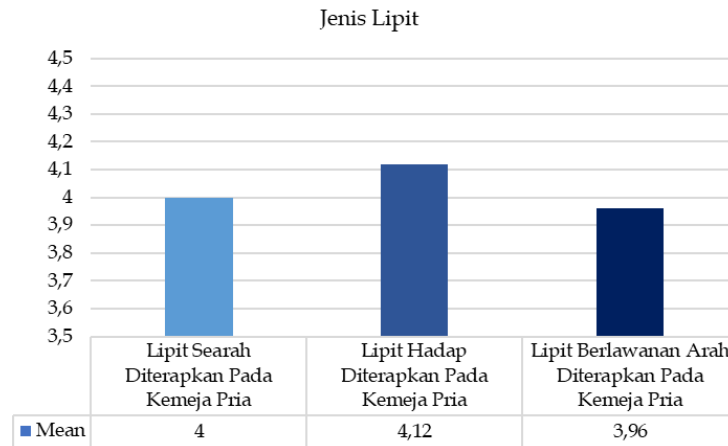


Figure 3. Types of Ribbons for Men's Shirts

The score obtained with indicator 1 "Unidirectional pleats applied to men's shirts" obtained a mean of 4 (good), the score obtained with indicator 2 "Facing pleats applied to men's shirts" obtained a mean of 4.12 (good), and the score obtained with indicator 3 "Pleats in the opposite direction applied to men's shirts" obtained a mean of 3.96 (good). Judging from the mean number of indicator 1, indicator 2, and indicator 3, the mean decay is greater than indicator 2, then the pleats that will be applied to men's shirts are facing pleats.

The placement of pleats applied to men's shirts is also something that must be paid attention to. The steps taken by the researcher in laying the pleats were by paying attention to the shape of the pleat lines used. The pleated line was made 1 with the results of the respondent's selection of 3 types of line shapes made by the researcher, these lines were vertical, horizontal and diagonal. The following election result data is presented in diagram form:

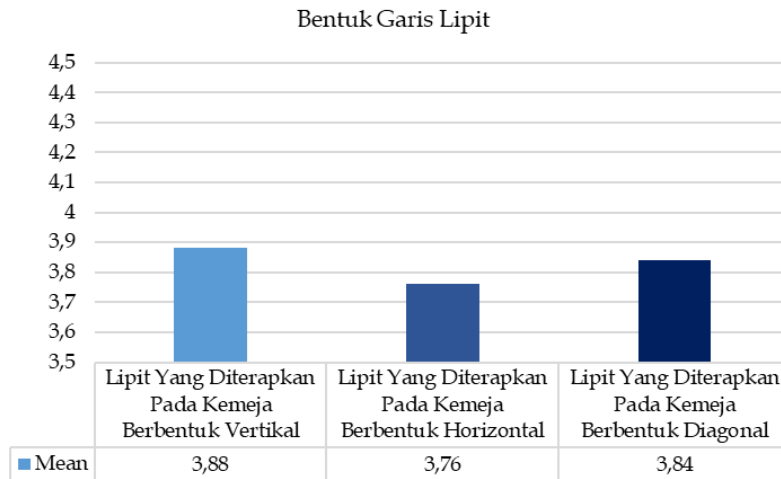


Figure 4. Form Pleated Lines on Shirts

The score obtained with indicator 1 "The pleated line applied to the shirt is horizontal" obtained a mean of 3.88 (good). The score obtained with indicator 2 "Pleats applied to horizontal shirts" obtained a mean of 3.76 (good). The score obtained with indicator 3 "The pleated line applied to the shirt is diagonal" obtained a mean of 3.84 (good). Judging from the mean number of indicator 1,

indicator 2, and indicator 3, the mean decay is greater than indicator 1, then the pleated form that will be applied to men's shirts is pleated with a vertical shape.

The researcher also made a selection of pleated laying designs with geometric jlamprang batik motifs. There were 8 designs created and then the one with the highest number of votes was selected. The results of the design selection made by respondents can be seen from the bar graph as follows:

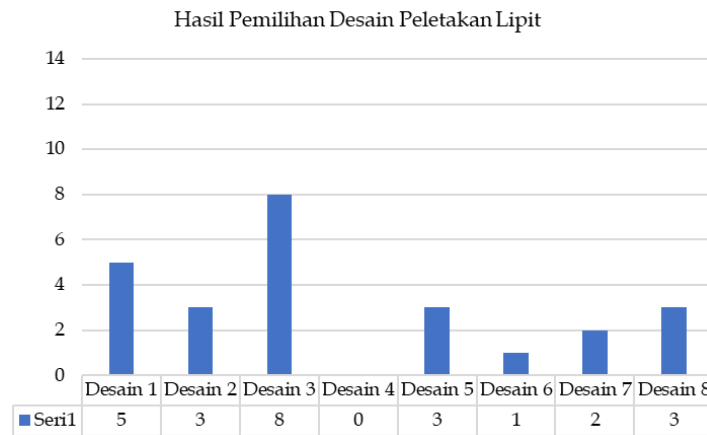


Figure 5. Pleated Laying Design Selection Results

Respondents chose the design for placing pleats on men's shirts with jlamprang batik motifs by considering the jlamprang motifs that had been created and determined by the researcher. The results of the selection in design 1 received a response of 5 people, in the selection of design 2 there were responses from 3 people, in design 3 there were responses from 8 people, in design 4 no respondents chose, in design 5 they received a response from 3 people, in design 6 they received 1 respondents, in design 7 got a response of 2 people, in design 8 got a response of 3 people. The highest number of respondents received design 3, so the design realized was a men's shirt design with the number 3.

From the results of the information above, it can be concluded that the shirt created uses a facing pleat type with vertical pleated lines. The design for placing pleats with the Jlamprang batik motif on men's shirts is design number 3 with the main color of the shirt being brown with pleats placed in the middle of the front of the body and in the middle of the shirt sleeves.

Results of the Development of the Jlamprang Batik Motif

For The result is an exploration of the jlamprang batik motif using digital printing techniques to apply pleats to men's shirts. The jlamprang batik motif applied to men's shirts appears in the middle of the arm circumference and appears in the middle of the chest width. The fabric printing results for men's shirts only use brown and the colors for printing jlamprang batik motif fabric use 3 colors, namely brown, black and white. The diameter of the circle shape in the jlamprang batik motif is 3 cm, the pleated size is 3 cm, and the size of the shirt used is size L Aldrich.

The finished results that have been completed are continued with the data collection stage with the instruments that have been prepared. The assessment results of each aspect can be seen through the following diagram:

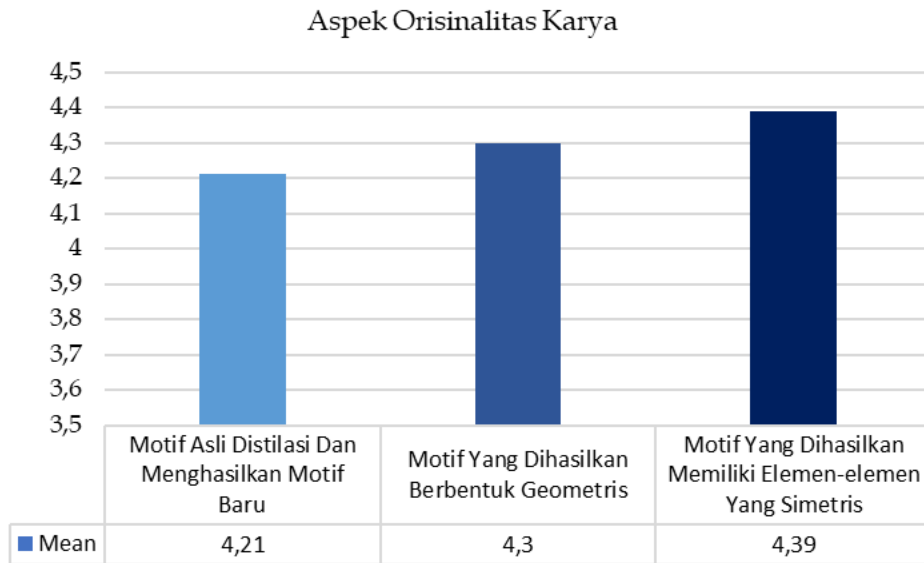


Figure 6. Aspects of Originality of Work

Based on the diagram above regarding the originality aspect of the work in indicator 1 "Original motifs are distilled and produce new motifs" obtained a mean of 4.21 (very good). The score obtained with indicator 2 "The motif produced is geometric in shape" obtained a mean of 4.3 (very good). Obtaining a score with indicator 3 "The resulting motif has symmetrical elements" obtained a mean obtained a mean obtained a mean of 4.39 (very good).

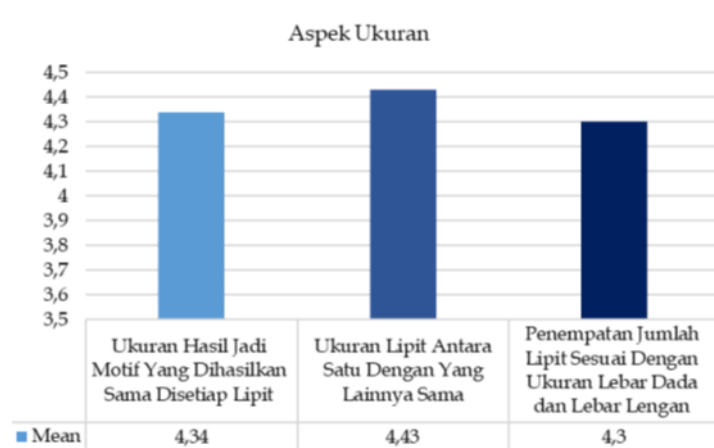


Figure 7. Size Aspect

Based on the diagram above regarding the size aspect in indicator 1 "The size of the resulting motif is the same in each pleat" obtained a mean of 4.34 (very good). The score obtained with indicator 2 "The size of the pleats is the same between each other" obtained a mean of 4.43 (very good). The score obtained with indicator 3 "The distance between the pleats on the chest width and the same arm width" obtained a mean of 4.3 (very good).

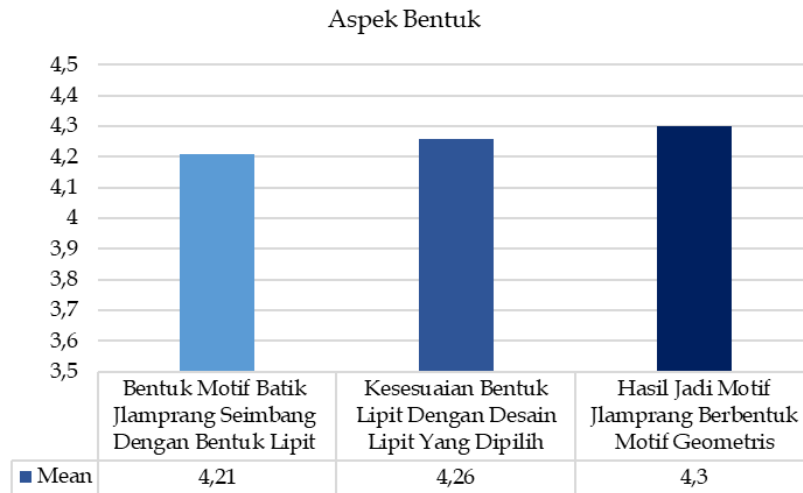


Figure 8. Aspects of Form

Based on the diagram above regarding the shape aspect in indicator 1 "The shape of the jlamprang batik motif is balanced with the pleated shape" obtained a mean of 4.21 (very good). The score obtained with indicator 2 "Conformity of the pleated shape with the selected pleated design" obtained a mean of 4.26 (very good). The score obtained with indicator 3 "The result is a jlamprang motif in the form of a geometric motif" obtained a mean of 4.3 (very good).

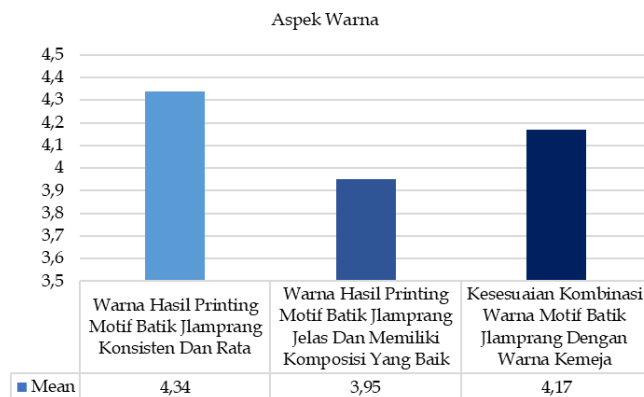


Figure 9. Color Aspect

Based on the diagram above regarding the color aspect in indicator 1 "The color of the jlamprang batik motif printing is consistent and even" obtained a mean of 4.34 (very good). The score obtained with indicator 2 "The color of the Jlamprang batik motif printing is clear and has a good composition" obtained a mean of 3.95 (good). The score obtained with indicator 3 "The

suitability of the color combination of the jlamprang batik motif with the shirt color" obtained a mean of 4.17 (very good).

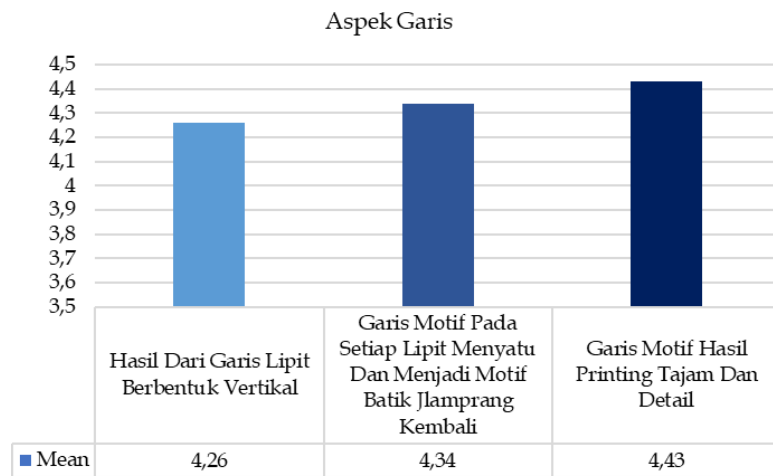


Figure 10. Line Aspect

Based on the diagram above regarding the line aspect in indicator 1 "Results from vertical pleated lines" obtained a mean of 4.26 (very good). The score obtained with indicator 2 "The motif lines on each pleat merge and become a jlamprang batik motif again" obtained a mean of 4.34 (very good). The score obtained with indicator 3 "The printed motif lines are sharp and detailed" obtained a mean of 4.43 (very good).

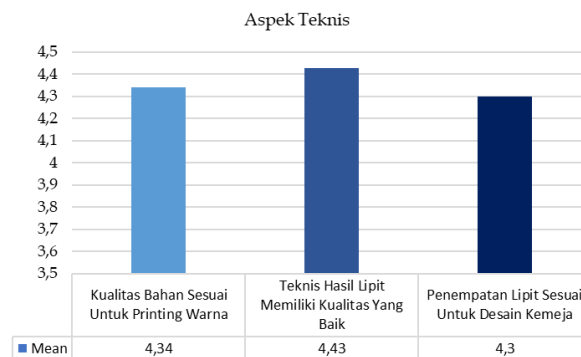


Figure 11. Technical Aspects

Based on the diagram above regarding technical aspects in indicator 1 "Material quality suitable for color printing" obtained a mean of 4.34 (very good). The score obtained with indicator 2 "Technically pleated results are of good quality" obtained a mean of 4.43 (very good). The score obtained with indicator 3 "Pleat placement is appropriate for shirt design" obtained a mean of 4.3 (very good).

After knowing the mean results per indicator for each aspect of the assessment, the next step is to calculate the total mean to find out the overall value of the results so that the innovation in applying pleats to men's shirts with jlamprang batik motifs is known. Here's a diagram of all aspects:

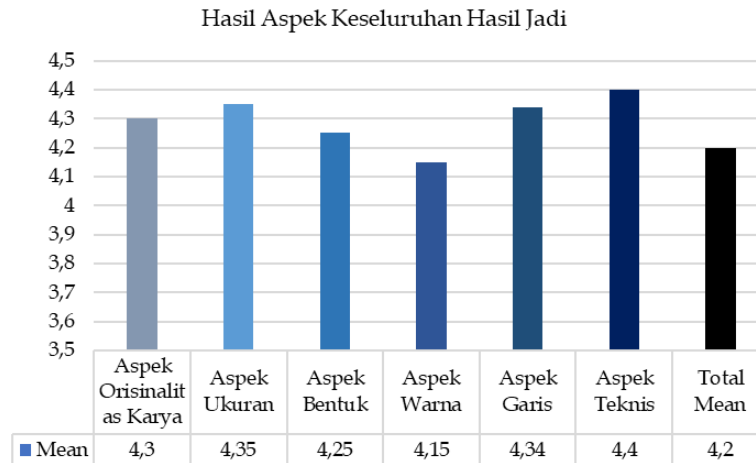


Figure 12. Overall Aspect of Finished Results

Based on the diagram above, the finished result from the originality aspect of the work obtained a mean of 4.3 (very good), the value obtained from the size aspect obtained a mean of 4.35 (very good), the value obtained from the shape aspect obtained a mean of 4.25 (very good), the score obtained from the color aspect obtained a mean of 4.15 (good), the score obtained from the line aspect obtained a mean of 4.34 (very good), and the score obtained from the technical aspect obtained a mean of 4.4 (very good). The overall aspect score gets a mean of 4.2 (very good) and is classified as appropriate.

From the explanation above, it can be concluded that the product results received a mean score of 4.2 (very good) with the highest aspect being the technical aspect with a mean of 4.4 (very good).

DISCUSSION

Results of the Development of the Jlamprang Batik Motif

Based on the results of data analysis of respondent responses, it is known that the jlamprang batik motif design as a whole received a good assessment.

a. Jlamprang Batik Motif According to Inspiration

The suitability of the jlamprang batik motif according to the inspiration obtained a mean of 4.08 and was included in the good category. In the process of realizing the jlamprang batik motif design, design elements are needed so that the design results can be read. Rochmawati (2020) stated that design elements consist of several such as size, shape, color and lines. In creating a design, inspiration is also needed which is expressed in a moodboard as a reference for developing a new design. In the jlamprang motif design, the development is carried out by restilling the original batik motif into a new motif.

b. Jlamprang Batik Motif Design Colors Match the Moodboard

The suitability of the color of the jlamprang batik motif design according to the moodboard obtained a mean of 4.04 and was included in the good category. When creating a motif, it is very necessary to pay attention to the colors that have

been previously determined in the idea source or moodboard. The colors contained in the jlamprang batik motif design are brown, black and white.

c. The results of the Jlamprang Batik Motif Design are Geometric Shapes

The suitability of the jlamprang batik motif design results containing geometric shapes obtained a mean of 4.16 and was included in the good category. The results of the jlamprang batik motif design contain geometric shapes, namely circles, triangles and rectangles. This is in line with Khikmah's (2021) research that the geometric shapes found in Jlamprang batik in Pekalongan City are in the form of points, lines and flat planes. These flat areas include circles, rectangles and so on.

d. Brown is the main color of the shirt

The suitability of brown as the main color of the shirt obtained a mean of 4.08 and was included in the good category. The choice of color is also one of the points in appearance, according to researchers, the color in a costume can be a public assessment of its wearer. This is in line with research according to syah (2019). This design uses neutral colors with the color chosen for the main color of the shirt being brown.

The results of developing the jlamprang batik motif were designed using the Adobe Illustrator application and then turned into batik motif fabric by printing. This is in accordance with Ghaisani's (2021) opinion that digital printing is the process of printing or applying patterns to textiles using digital techniques. The dyes used are generally acid dyes, while the textile patterns and designs are designed using special graphics software. The brown color for the main color on the shirt also uses printing techniques, so in the design for printed fabric there are 2 different types, namely plain brown fabric and fine patterned jlamprang fabric.

Application and Placement of Ribbons on Men's Shirts with Jlamprang Batik Motifs

Pleating is the manipulation of fabric by folding the fabric back and forth and then pressing or sewing it until several folds of fabric are formed on the surface of the clothing. Colette (1996) stated in her book "The Art of Manipulating Fabric" various pleats such as knife pleat, box pleat, inverted pleat. The type of pleating applied to men's shirts chosen by respondents was the facing pleat type with the highest mean score of 4.12 and was included in the good category between the one-way pleat type and the opposite direction pleat type.

When applying pleats to men's shirts with jlamprang batik motifs, pay attention to the lines applied. A line is an outline or contour of a shape. This is in line with Pratama's (2018) research which suggests that each different line shape has a different character. Lines have vertical, horizontal and diagonal directions and lines have long, short, thin and thick dimensions. When applying the lines on men's shirts, they are vertical lines with the highest mean value, namely 3.88 and are included in the good category between horizontal and diagonal lines.

The results of the design selection regarding the placement of pleats on men's shirts with jlamprang batik motifs were chosen 1 from the design development to be made into men's shirts. The highest number of results for

choosing this design was design number 3. The embodiment of the shirt with pleated placement also pays attention to the symmetry between the right and left sides so that the motif looks balanced and neat. This is in line with research according to Nurrohman (2016), the arrangement of balanced and rhythmic motifs gives a neat and orderly impression, making it beautiful to look at. Placing motifs neatly and repeatedly gives beauty to shirts.

Results of Exploration of Jlamprang Batik Motifs Using Digital Printing Techniques for Applying Pleations to Men's Shirts

The finished result is an exploration of the jlamprang batik motif using digital printing techniques to apply pleats to men's shirts, a series of manufacturing stages have been carried out. The initial process carried out is making the jlamprang motif on the fabric using printing. Next, the finished cloth with a jlamprang batik pattern is wound and pleated and then sewn with plain brown cloth which has been cut according to the Aldrich shirt pattern until it becomes a men's shirt.

The pleated result is applied to a men's shirt with a jlamprang batik motif to produce a complete motif. This batik motif is geometric in shape with symmetrical elements, so that if the motif on one pleat meets another pleat, the lines of the batik motif will meet and produce a complete motif or not produce a new motif. The provisions for the size of the pleats also affect the finished batik motif. If the pleat size is 3cm or the folding of the pleated fabric fits in the middle of the motif, then at every pleat that meets the resulting batik motif will also remain intact. When the pleats are opened, the jlamprang batik motif will also appear intact.

The obstacles experienced during the process of making men's shirts include difficulties in making pleats. Making the facing pleats uses manual techniques because you need to be careful to match the motifs in each pleat. The pressing process is not only enough to use a pressing iron, if you only use an iron to form the pleats it will take a long time because the pleats are difficult to form permanently. The method that can be used to make neat and permanent pleats is by using liquid plisket to make permanent pleats and does not take time. Furthermore, pressing cannot be done with a pressing temperature that is too high because it can damage the quality of the fabric so it is enough to use pressing at a medium temperature and Ironing must be slow, careful and careful. In each pleated result, you need the help of a needle pin so that the previous pleated result is not damaged or changed. After all the pleats are finished, sewing is done at each edge and in the middle so that the pleats are easy to sew with plain brown cloth to make a shirt.

The resulting pleated innovation in men's shirts with geometric-shaped jlamprang batik motifs was then assessed by respondents with 3 experts and 20 men with an age range of 17-35 years. The results of the data obtained are then discussed in connection with supporting research. Discussion of data results as follows:

a. Judging from the Aspect of Originality of the Work

According to the results data for aspect 1 "Viewed from the Aspect of Originality of the Work" the three indicators obtained a mean of 4.30 (very good) in terms of producing jlamprang batik motif printing producing new motifs, geometric shaped motifs, and motifs having symmetrical elements. This is in accordance with the opinion of Arif (2021: 11) that the originality of design creation is a design creation that has an element of authenticity in the characteristics of the creation. A creation is considered creative if it has novelty or originality, although novelty is not completely new but there are elements of innovation, combination, alteration of existing forms, so that something new is created.

b. Judging from the Size Aspect

According to the results data for aspect 2 "Viewed from the Size Aspect" the three indicators obtained a mean value of 4.35 (very good) in terms of the size of the results so the motif is the same on each pleat, the size of the pleats is the same with each other, the placement of the number of pleats is in accordance with the size of the chest width and arm width. This is in accordance with the opinion of Muhyidin (2020) who says that size is an element in design that defines the size of an object. This element is used to show which objects are highlighted and to create contrast and emphasis (emphasis) on the design object so that people will know the object's priority scale.

c. Judging from the Form Aspect

According to the results data for aspect 3 "Viewed from the Shape Aspect" the three indicators obtained a mean value of 4.25 (very good) in terms of the shape of the motif being balanced with the pleated shape, the suitability of the pleated shape with the selected pleats, and the resulting geometric motif. This is in accordance with the opinion of Afuwwa (2015) that shape is anything that has diameter, height and width. The basic shapes generally known are squares, circles, triangles, ovals, and others.

d. Judging from the Color Aspect

According to the data from aspect 4 "Viewed from the Color Aspect" the three indicators obtained a mean value of 4.15 (very good) in terms of the color of the printed motif being consistent and even, the color of the printed result being clear and having a good composition, the suitability of the color combination of the batik motif with the shirt. Paksi (2021) suggests that colors have philosophies, symbols and emotions related to the interpretation of meaning with certain colors as a form of color psychology.

e. Viewed from the Line Aspect

According to the data from aspect 5 "Viewed from the Line Aspect" the three indicators obtained a mean value of 4.34 (very good) in terms of the vertical pleated lines, the motif lines on each pleat unite and become a jlamprang batik motif again, the printed motif lines are sharp and details. A line is an elongated shape and has properties that are elastic, stiff and firm. Sudarso (2019) stated that the processing of a line will produce curved lines, straight lines, broken lines, thick lines and thin lines.

f. Viewed from a Technical Aspect

According to the results data for aspect 6 "Viewed from Technical Aspects" the three indicators obtained a mean value of 4.40 (very good) in terms of material quality suitable for color printing, technical pleating results of good quality, pleat placement suitable for shirt design. This is in line with research from Dewi (2021) which states that not all textile materials can be used to make men's shirts because the textures, patterns, colors and types are different. Types of textile materials that are suitable for men's shirts, such as cotton.

g. Viewed from all aspects

The total mean of all aspects of the innovation assessment of the application of pleated men's shirts with geometric-shaped jlamprang batik motifs, obtained a mean of 4.20 (very good). This is in line with research from Yuningsih (2020) which states that the beauty and attractiveness of contemporary batik patterned shirts tend to be unusual, unique and different in terms of their visual composition.

CONCLUSIONS AND RECOMMENDATIONS

It can be concluded from the innovation in applying pleats to men's shirts with geometric-shaped jlamprang batik motifs as follows: (1) The final result of developing the jlamprang batik motif begins with several stages, namely determining the jlamprang batik motif as a source of ideas and carrying out development of the jlamprang batik motif and color selection brown as the main color on the shirt. (2) The application and placement of pleats on men's shirts with jlamprang batik motifs begins with several stages, namely determining the type of pleats, determining the type of pleat line, and selecting the design for placing pleats on men's shirts. (3) The result is a pleated jlamprang batik motif on a men's shirt, which is in the very good category. Compatibility with the originality of the work such as producing new motifs, geometric shaped motifs, motifs having symmetrical elements. Matching the size results in the same motif on each pleat, the size of the pleats is the same, the placement of the number of pleats corresponds to the size of the chest width and sleeve width. The suitability of the shape of the motif is balanced with the shape of the pleats, the suitability of the pleats is in accordance with the selected pleat design, the resulting motif is geometric in shape. The suitability of the color of the printed motif is consistent and even, the color of the printed result is clear and has a good composition, the suitability of the color combination of the motif and shirt color. The conformity of the pleated lines is vertical, the motif lines on each pleat blend together and become a complete motif again, the printed motif lines are sharp and detailed. The technical suitability of selecting materials for color printing, the technical pleating results are of good quality, the placement of the pleating is appropriate for the shirt design. Based on the results of the research on the innovation of applying pleats to men's shirts with the jlamprang batik motif, the researcher provides suggestions including: Making pleats by finding motifs is done more carefully because it can eliminate the motif.

FURTHER STUDY

In further research, the Jlamprang batik motif can be redeveloped with more diverse colors, for example colors that are trending during the research period and more varied motif shapes, for example creating stylizations with various motif shapes that have not existed before.

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