Designing a Sumatran Tiger Motif as an Effort to Increase Public Awareness in Protecting the Crisis of Protected Animal's Populations in Indonesia

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Abstract: The Sumatran Tiger is one of faunae which is threatened with extinction due to illegal logging and hunting. In efforts to protect the Sumatran Tiger, management and conservation, habitat monitoring, trade law enforcement, confiscation and rehabilitation of suspected violators are carried out. However, public awareness still needs to be increased regarding the population condition of this species. Communication in various forms is needed to convey messages to the public. One of them that can be used is visual communication, which is a creative process that conveys ideas from art and technology guides. The aim of this research is to raise public awareness of the conservation of the endangered Sumatran tiger through developing motifs on fabric. For this reason, a design is needed that is able to communicate the message so that it is easily understood by the public. The method used is to first design a motif based on observations and interviews with the target audience, then distribute a questionnaire to the target audience regarding their perceptions and impressions of the motif.

1 INTRODUCTION

Sumatra is one of the islands that has large mining wealth in Indonesia such as gold, silver, nickel, etc., so it has a positive impact on national development. Apart from that, Sumatra also has varied flora and fauna. One of the famous faunae is the Sumatran Tiger which is threatened with extinction. In 1996 the Sumatran Tiger was in the Critical Endangered level according to IUCN (International Union for Conservation of Nature) data. It is estimated that in 1992, the remaining animal population was 400 in five national parks. Sumatran Tigers have spread from Aceh to Lampung numbering 600 heads but fell to 400 heads in 2004. Although in 2012 there were 618 heads however the animal's population dropped drastically to 371 heads in 2016. (Khoirunnisa and Mahendra, 2021).

The decline in animal population is caused by logging and illegal hunting. Illegal logging in Sembilang National Park in the SPTN III area which has been carried out by the society has caused the loss of natural animal habitat. Hunting for wild animals was carried out by luring, snares and shooting, thereby threatening the sustainability of the Sumatran Tiger. Lastly, there is a lack of public awareness regarding the threat of extinction of the Sumatran Tiger (Paiman et al., 2018). Based on POLDA (Mirwazi Regional Police) data, there were 15 cases of wildlife trafficking, such as the trade of Sumatran Tiger furs in Aceh in 2014. In 2015 there were 10 cases until 2016, the Aceh POLDA succeeded in handling these cases in Bireun Regency (Lestari and Efendi, 2017).

In implementing the protection of Sumatran Tigers, training and consultations, habitat monitoring, trade law enforcement, confiscation and rehabilitation of suspects who violate are carried out. Apart from that, the government is improving the quality of human resources in supervision and law enforcement, outreach and knowledge to increase public understanding of the importance of Sumatran Tiger conservation, as well as collaborating with law enforcers and the citizens to improve animal protection and preservation (Lestari and Efendi, 2017).

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2 LITERATURE REVIEW

Motifs are often used in the field of arts with various inspirations from surrounding objects or events with their own styles and variations to provide a message or visual to the public. Motifs are works that function in product efficiency as messages or visual expressions, so they include visual communication. In motifs, objects that can be used as visual assets are flora, fauna, geometric, abstract, and others that are combined into one repetitive visual. Each motif can be used to produce a work that has meaningful beauty (Mutiarani, 2021).

According to Untoro (2019) motifs are the characteristics and patterns in the embodiment of the concepts and themes that have been explained. Motifs are sometimes repeated to obtain appropriate patterns and manifestations. According to Sunaryo (2009), a motif is an ornament which is generally formed from nature (leaves, mountains, sun, animals, etc.). Finally, according to Suhersono (2004), in the process of creating motifs, sequence, combining basic shapes and various lines is needed to produce new authentic and beautiful motifs (Siana et al., 2022).

The motif requires wastra that is a piece of cloth as a placement material. According to Ahmad Karoni (2021), lit is a unity that has a complete decorative variety inside. Wastra is determined through motifs and is seen as values, impressions, messages, symbols and information that were included.

Motifs are for communicating messages to the target audience, because visual perception is built on appearance, shape and space as in perceiving a product (Alizamar & Couto, 2016). This is no exception, as motifs can form perceptions that can be captured by the target audience visually. In the Gestalt theory of perception, humans have the ability to simplify and group elements that can be seen and felt into one unified form (Alizamar & Couto, 2016). In line with the basic principles of unification, the principles apply, namely:
- Figure & ground: The stimulus received will be connected to the context or circumstances surrounding the object. In the organization of human perception, the main pattern (figure) that describes the elements in a field of perception will be the most important. The elements that are less important are called basic patterns (ground). The phenomena of main patterns (figure) and basic patterns (ground) are the most basic forms of perceptual organization (Van Eymeren, 2014)

The application of Gestalt theory can influence human perception. Perception begins with a sensing process where the stimulus is received by the five senses, then the individual has attention and is transmitted to the brain. After that, the individual is aware of and can understand the surrounding environment and what is within the individual. Perception can be interpreted as a process of receiving stimulation from the five senses, preceded by attention so that the individual is able to perceive, know and appreciate the good things that are observed both outside and within the individual (Sunaryo, 2002)

A visual object such as a motif can function as brand awareness to increase public attention. In principle, brand awareness refers to the strength with which a brand can be present in consumers' minds. (Pappu, Quester, and Cooksey, 2005), this can happen if there is a relationship between the brand and the type of product, where potential consumers recognize or associate it with a particular product. With that, awareness can only be from brand recognition to brand memory or simply memory of the product becoming dominant, if it is the only brand that consumers remember. (Hakala, Svensson & Vincze, 2012). In terms of designing motifs and efforts to instill them in the minds of consumers, it is important to give uniqueness to a motif so that it can be remembered by the target audience. Motifs also function to show identity related to creative works as personal, corporate or regional identity (Sartika, et al, 2017). Therefore, motifs can be used as a medium to convey messages to the target audience through their uniqueness.

3 METHOD

The methods that are used in this research are exploring the life and image of tigers and the habitat of Sumatran tigers. The exploration method is a method that see, observe, understand and feel to produce something. The exploration method is applied in artistic activities because it is closely related to creativity (Faida, et.al, 2020).

First, identify the conflict faced by the Sumatran Tigers. Second, reset the shape and color of the Sumatran Tiger to be used as a moodboard. Third, carry out the design process that will be used as a motif. Finally, carry out a literature study to understand all of the datas that has been collected, problems, solutions and other explanations about animals. This method improves the process of creating motifs for order, meaning and significance of art, as well as motif quality.
Then, use a documentation method to personify the meaning of the motif. Lastly, collect all the sketches

that have been assisted without any plagiarism then carry out digital documentation of the motif during the practicum class from design to repetition.

Next, a questionnaire was created to determine consumers' perceptions of the designed motifs. The questionnaire was created on a Likert scale and then tested on 40 respondents to test its validity and reliability. Then 11 questions were obtained to be distributed again and then 102 respondents were obtained and then processed using Factor Analysis. The results of the Factor Analysis were then verified by conducting a Focus Group Discussion with 10 respondents to find out their perceptions and impressions of the Sumatran tiger motif that had been designed.

4 RESULT & DISCUSSION

4.1 Result

4.1.1 Exploration Process

Before carrying out the exploration process, the designer chose Sumatran Tiger's fur to determine the color of the motif and from the face to neck for the shape. In addition, the designer's goal is to provide a visual protection for animals. Then, because Daun Sang/Sang Leaves is an endemic plant in the Sumatra region and gives the impression of nature surrounding it, the designer included Daun Sang/Sang Leaves as a form of asset. Lastly, Mount Sibayak to depict life in nature and prosperity.

The Sumatran Tiger is the smallest species currently, almost the same size as leopards and jaguars. Sumatran Tigers have dark orange fur and wide black stripes. In addition, Sumatran Tigers have short manes with longer fur on the sides of their faces (possibly as protection against forest vegetation) (Moretti, 2021).

Sang leaves are one of the widespread plants in Sumatra, so they were previously used as roofs for local people's houses. According to the IUCN, Sang Leaf is included in the Red Data Book as a plant that is threatened with extinction due to its use by residents in forest areas as roofing material for houses, wall materials and huts or cottages as well as land clearing activities, forest fires and deforestation (Sihombing et al., 2014).

According to Karo people's beliefs, Mount Sibayak is associated with prosperity and wealth (the word 'bayak' means 'rich'). According to Karo, the concept of wealth is not only material but also spiritual and cultural. The meaning of the name

Mount Sibayak teaches about inherent cultural interpretations (Rizal, 2023).

In the exploration process, a mood board is created based on the concept that was included. Mood board is defined as a board media to provide ideas and help designers in the design process. Mood board can raise a designer's enthusiasm for learning in achieving competency in learning fashion design so that there is visual knowledge and understanding. Apart from that, mood board can be a guide in creating themed creative works so that the creative process is in suitable with the specified theme and the purpose of creating the work (Bestari and Ishartiwi, 2016).
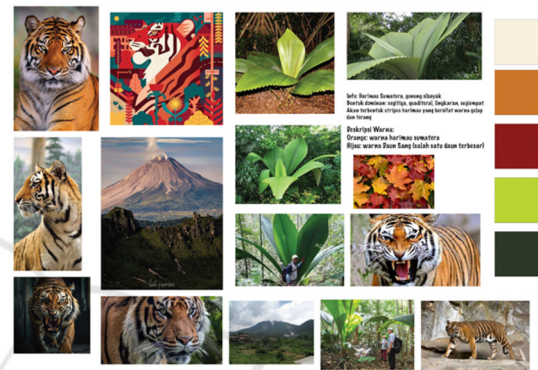

Figure 1: MoodBoard.

In the mood board, there were various photos of Sumatran Tigers and Sang Leaves with different perspectives and poses so that the designer could understand the anatomy of the tiger and leaf in geometric shapes as well as two photos of Mount Sibayak as a reference. In the color palette, the designer used complementary colors which are opposite colors, two colors that contrast and stand out, such as red and green. Apart from that, accent colors are used in clothing which are the addition of different colors to not destroy the color unity, such as cream and orange as well as light and dark green (Meilani, 2013). The cream color was taken from tiger fur and symbolizes hope and purity (Novelisari, et.al, 2020). The red color was taken from autumn leaves gives the impression of courage, enthusiasm and spirit. Then, the orange color was taken from tiger fur gives the impression of caring, motivation, enthusiasm. The light green color was taken from the leaves gives the impression of growth, fertility and even health. Lastly, the dark green color gave the impression of prosperity.

After the mood board, sketches were made to combine various geometric shapes in the form of triangles, quadrilaterals, circles, rectangles and crystals. The sketches were drawn onto A4 paper in a

13 x 13 cm square box and dialed. The sketching process was carried out in various types to determine the arrangement, combination of shapes and composition that were interesting and according to the concept.
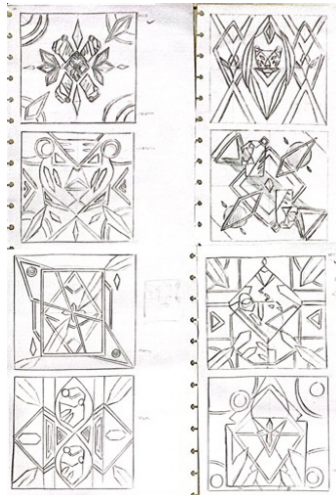

Figure 2: Alternative Design.

The designer also explored the shapes of the Sumatran Tiger, Sang Leaves and Mount Sibayak to match the geometric shapes in the motif. The exploration process was carried out according to the student's theme and goal of conveying something through design and students. The longest process was sketching because it requires a lot of exploration and strong imagination to create an attractive and proportional design for a motif and avoid plagiarism.

After the sketching process, the color selection process was carried out to be assigned to each motif element according to the concept. The placement of colors provides an expressive atmosphere and attracts attention. The designer emphasized that the colors should be in harmony with each other to suit the process of repeating the shape. After sketching, the designer used Adobe Illustrator software to create vectors and color.

4.1.2 Design Process

In this process, the sketch is digitized in Adobe Illustrator software with CMYK color mode. The purpose of using Adobe Illustrator software is to correct colors and repetitions to form patterns and motifs. The designer could refine and change elements in the design to provide the right composition. Starting from the sketch, it was traced using the pen tool in the tool bar to form precise and neat elements for printing. In the design design

process, a mature concept was determined according to the theme and meaning. The following were all of the sketches that had been digitized:

Figure 3: Motifs 1.

In this first pattern, it gives the impression that the Sumatran tiger population is decreasing and is threatened with extinction. The circle at the end comes from the shape of Mount Sibayak which is simplified into a plane because Mount Sibayak is not completely triangular and curved and gives the impression of a life cycle (changes experienced by species) after repetition. The Sumatran tiger in the center is given a green color to represent health and prosperity. The circles and small crystals found on the Sumatran Tiger's body are part of the tiger's body and the tiger stripes are formed from Sang Leaves. The large and small crystals come from the shape of the inner Sang Leaves which is covering the tiger and is placed for protection.

Figure 4: Motifs 2.

In the second pattern, it gives the impression of a Sumatran Tiger opening its mouth to growl and roar for help. The crystal at the end of the motif and other elements in the mount and the tiger come from the Sang Leaf. At the top of the tiger, there is a triangular shape as Mount Sibayak to protect and provide prosperity so that the tiger and mountain elements are combined. The two triangles on the right and left of the tiger give the impression of a threat to the tiger. At the end, a crystal element for the Sang Leaf is placed so that after it is repeated, it forms a 'bloom' from extinction.

Figure 5: Motifs 3.

In the third pattern, it gives the impression of a warning sign for the Sumatran Tiger, which is why there is a red circle on the back of the tiger in the middle of the image to give attention. The circle at the end of the motif comes from the shape of Mount Sibayak which is simplified to give the impression of a life cycle (changes experienced by species) after repetition. The small crystals together with the triangles in the shape of a bow and arrow give the impression of a threat because initially, the extinction of tigers started from illegal hunting. The large crystal gives the impression that the tiger is being protected.

In all these patterns, the designer placed the tiger in the center to draw attention. For coloring, harmony and meaning. After forming a pattern from all the elements that have been combined, a pattern technique is used in the object bar where the process of repeating motifs was carried out horizontally and vertically. The following is a motif from a pattern that has been repeated using the pattern technique:
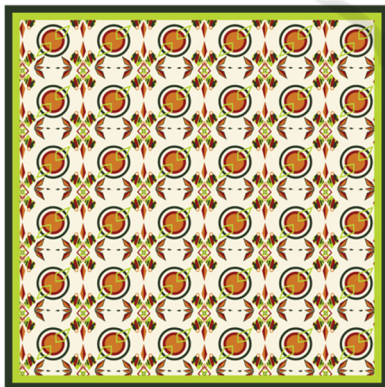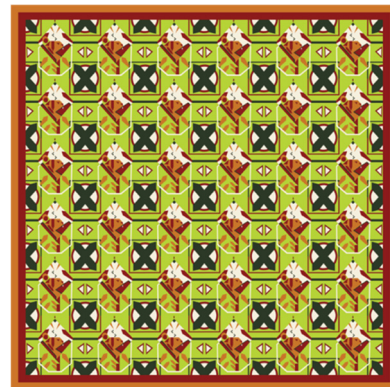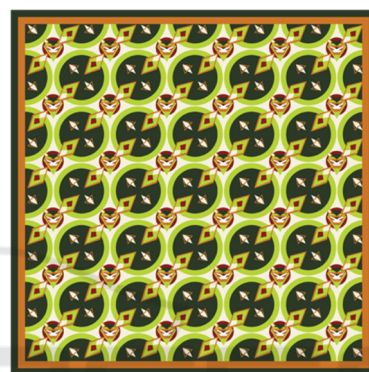

Figure 6: Motifs 1.

Figure 7: Motifs 2.

Figure 8: Motifs 3.

Then, the motifs that had been created digitally are made in the form of fabric products. The designer has reasons for selecting the type of fabric that will be applied. The following are the results of the mock up motif:

Figure 9: Material Cotton Cloth.

Figure 10: Tapestries.

Figure 11: Flannel.

The purpose of choosing the fabric materials listed is to be able to print via digital printing and maintain the condition of the furniture and provide comfort with good softness. In the digital printing process, a process of "transferring" the design via sublimation or digital transfer will be carried out on the printer machine. Even though the sublimation method uses synthetic materials, there are also natural materials. However, because the fabric is made from natural materials, color absorption is carried out. In order to make the colors match or are the same as the digital design, the printed design colors are given a higher saturation. Then, use the screen printing or screen-printing method which is a fast method of combining digital or traditional printing techniques on the screen. The materials used are colored pigment and adhesive glue for foiling. Then, the fabric is washed and a machine border technique is used so that the details of the motif can be seen (Arihta and Saftyaningsih, 2013).

Apart from that, it can be applied to furniture such as tables made from ecobrick materials. Ecobricks are a creative effort to manage plastic waste into usable objects with the aim of reducing pollution and toxins caused by plastic waste. Then, it can prevent tree logging for materials that are used as furniture and

protect the habitat of tigers and other species (Suminto, 2017).

The designer can learn how designs are communicated in visual forms to provide meanings and messages through geometric motifs during basic design learning. In applying the motifs, the products were designed in the form of fabric as one of the materials mostly used by the citizens with the aim of increasing public awareness of the importance of protecting animals and the environment. The results of this design were then tested on respondents to determine their perception of aesthetics and the communication message conveyed. The results obtained through factor analysis are as follows:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.855
Bartlett's Test of Sphericity	Approx. Chi-Square	421.350
	df	55
	Sig.	.000

Figure 12: The results of the KMO and Bartlett's Test.

From the results of the KMO and Bartlett's Test above, it showed that the result of 0.855 stated that the results of distributing the questionnaire had good value so that the results of the questionnaire could be interpreted.

Table 1: Questionnaire Results.

Question	Motif 1	Motif 2	Motif 3
This motif design caught my attention	.567	.779	.784
I'm interested in using this motif as a clothing/accessories motif	.608	.747	.803
This motif made me want to know more about the issue regarding the condition of Sumatran tigers	.662	.563	.944
I feel that the motif on this cloth depicts the protection of the Sumatran tiger and provides support for the conservation of endangered animals	.732	.794	.816
I feel that the motif on this cloth depicts the protection of the Sumatran tiger which is threatened with extinction due to poaching/illegal logging	.771	.798	.805

Table 1: Questionnaire Results (cont.).

Question	Motif 1	Motif 2	Motif 3
This motif design makes me want to further support Sumatran tiger conservation efforts	.746	.682	.845
I feel this motive encourages me to participate in preserving the Sumatran tiger	.782	.786	.837
I feel that this motif is a creative and effective way to convey conservation messages to the target audience	.610	.630	.865
I feel that this motif can be an effective tool in campaigns on social media for Sumatran tiger conservation	.566	.635	.755

From the results above, it could be seen that Figure A did not attract the attention of the target audience as indicated by the poor correlation value. It also showed that this motif did not attract the attention of various ages of the target audience. However, the target audience still felt that this motif could raise their awareness to preserve endangered animals, especially the Sumatran tiger. Figure B was enough to attract the attention of the target audience, but did attract their curiosity about the condition of the Sumatran tiger. Figure C had attractive visuals and was able to attract the attention of the target audience in preserving the Sumatran tiger. Of the three images, Figure B was considered the most visually interesting, indicated by the highest correlation value among the three. However, after being applied to the design object, Figure C looked more attractive among the three. Although visually interesting, Figure B did encourage the target audience to want to know more about Sumatran tigers. After being confirmed through FGD with the target audience, Figure B was more visually attractive but was not yet able to convey a message through shapes related to the tiger image. In terms of efforts to convey conservation messages for Sumatran tigers, Figure C was better to convey these messages than the other two images so that Figure C was considered more effective in building public awareness related to tiger conservation.

Based on the results of the Focus Group Discussion conducted with 10 respondents, it was concluded that Figure C had the best response among the three as a media campaign for the protection of Sumatran tigers. From the results of the FGD, they got the impression that the shape was similar to a tiger's head in terms of visual perception.

4.2 Discussions

The Sumatran tiger is one of the animals experiencing a population crisis in Indonesia due to illegal logging which causes loss of animal habitat as well as illegal hunting due to lack of public awareness. The government has held activities and outreach on Sumatran Tiger protection to increase public awareness. In designing there are several important elements such as dimension points, lines, planes, texture, space and color. During the exploration and design process, the designer summarizes his inspiration in the form of a moodboard to determine the shape approach and color palette of the design pattern which will be repeated into a geometric motif.

In the color palette, complementary colors such as cream, red, orange, light green and dark green are used to give a natural impression of protection and peace and train the designer's sensitivity in color combinations in a design. After the sketch process is digitized and the design application of the image is determined after it is printed on natural fabric. After designing the pattern, the designer creates a pattern that is repeated into a motif. The first motif gives the impression that the Sumatran tiger population is decreasing because it is threatened with extinction, so it needs to be protected and preserve the life cycle of this species. In the second motif, the Sumatran tiger under the mountain opens its mouth to growl and roar for help because its need for natural life is disappearing. Finally, the third motif, as a warning sign for the Sumatran Tiger which needs to get public attention. The motif that has been designed will be printed on fabric in the form of cotton, tapestry and flannel. Then it is applied to plastic ecobrick furniture to become objects that can be used to prevent excessive felling of trees and protect animal habitats. Through this design process, designers can identify certain visuals that can provide meaning and messages through motifs and understand the dangerous situations faced by protected animals during this time.

From the results of the discussion above, there is something interesting and a finding that a motif can remind target consumers of a message, in this case to raise awareness of the target audience regarding the conservation of Sumatran tigers. Motif C reminds the target audience of the shape of the Sumatran tiger's head. In Gestalt theory there is the principle of the law of equivalence. In observation, objects that have similarities (similarity) to each other will be organized into one perception. In other words, things that are similar to each other will be perceived as a group or a totality. (Hidayati, 2011). The use of green

and brown colors reminds the target audience of the forest as a habitat for Sumatran tigers. Meanwhile, at first glance, the object in the middle resembles the shape of a tiger's mouth and nose. However, after being repeated into a unified motif, at first glance it will look like a tiger's head.
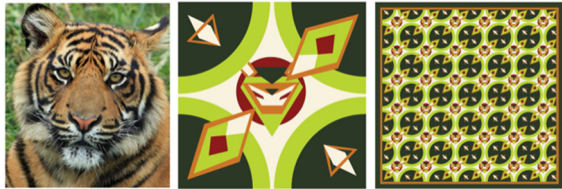

Figure 13: Shape of the Sumatran tiger's head from Motif 3.

From this it can be concluded that the application of Gestalt principles in building public awareness is very important. Gestalt principles can help designers in formulating and creating object forms or images that can improve an individual's perception of an object. The presence of several design elements related to the image and habitat of tigers can be unique and capable of raising awareness among the target audience.

5 CONCLUSIONS

From the explanation above, it can be concluded that the motif can be used to build public awareness about the conservation of the endangered Sumatran tiger. However, several efforts are needed so that the communication message can reach the target audience. One way is to apply several elements related to the tiger's image, for example body shape, body parts, use of relevant colors, and the tiger's habitat. In the case above, image C, which has several elements that are similar to the shape of a tiger's body parts, is complemented by the use of colors that are relevant to the image of the forest. It is important to apply the principles of Gestalt theory to strengthen the impression of closeness (similarity) to the shape of the original object so that it will make it easier for the target audience to recognize the shape and in turn will help make them aware of the existence of the endangered Sumatran tiger.

5.1 Recommendation

For those who wish to initiate further research, it is highly recommended to find out the effectiveness of the motifs created when implemented in social media campaigns, such as Protection of Endangered Animals. This research focuses on rare animals such as the Sumatran tiger. This motif can also be applied to various types of media or explored into new designs based on research to increase awareness of the Sumatran Tiger.

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