

Research Article

Product design of Sukhothai fabric woven Lampshade from Origami techniques

Sakarin Hongrattanavorakit ^{*} and Sukunya Chantakul

Faculty of Home Economics, Rajamangala University of Technology Phra Nakhon, Bangkok 10300, Thailand

Abstract

Research on Product design of Sukhothai fabric woven Lampshade from Origami techniques is to study consumer satisfaction with the product. The researcher has defined and design sketch of the fabric pattern on one lampshade for five expertise to choose the most suitable design for Sukhothai fabric woven Lampshade from Origami techniques. Then we did a satisfaction survey for the satisfaction level from 50 persons of the target group, The collected data were analyzed using frequency, percentage and mean with the following analysis results. The survey found that by patterning the fabric horizontally will make the lamp bigger and gives relaxation feel, and the six-petaled origami fold is appropriate because it's resembles a lotus flower which is the province flower of Sukhothai, The decoration styled is group overlay, suitable because the natural composition. The satisfaction of sample consumer towards the prototype product, The average score of 4.10 toward the design and composition of the pattern is related, The average score of 4.36 which is at the highest level for the lampshade is convenient to use and in term of usability and the product suitable for sale the average score is at 4.16

Keywords: Lampshade, Product Design, Sukhothai Fabric woven, Origami Techniques

^{*} Corresponding authors:

Sakarin Hongrattanavorakit E-mail: Sakkarin.ho@rmutp.ac.th

Received: 5 May 2021,

Revised: 24 June 2021,

Accepted: 7 July 2021

Introduction

Sukhothai is a province famous for its weaving especially the Hat Siaw, local woven cloth which is the famous fabrics of Thailand. At present, Sukhothai woven fabrics are continuously developed into products for use such as shoulder bags, blouses, shirts, coats, shawl, the finished sarong, etc. There is also a study on the development of textile souvenir products of Ban Hat Siaw community, Sukhothai. (Burapajattana, 2016) Pearl Pattern fabric (woven fabric with beautiful spherical shape like a pearl) at Ban Hat Siaw, Sukhothai. It is a hand-woven cotton fabric, classified as a Yeab Dok fabric, a type of hand woven fabric, that has a circular pattern like a pearl. It's a cloth with a narrow face used to make sarongs connected with Teen Jok cloth or be sewn into clothing. (Madee, 2561)

A lamp is as an illuminator with windshield or a light regulator used for placing on the table, carrying or hanging. (Royal Institute Dictionary, 2013) It can also be a home decoration that is charming and unique in itself. Moreover, the lamp does not only give light but can be a decoration that will create an image of the home as well. Nowadays, there are many manufacturers of various types of lamps, such as lamps from waste cloth (Jaiaeim andChandhsa, 2020) woven lamps from palm leaves (Anunvrapong, Noodang, Srichamon and Chantararamak , 2018) lamps from Vetiver Grass (Sirisan, Baikulab, Panpeth andKlinkled, 2017)

Origami is the Japanese word "oru" means fold and "kami" means paper. Origami originated in Japan over 50 years ago. It is classified as an art that is a cultural heritage and also a leisure activity as well. (Sensod, 2014) Origami is not just the art of folding paper in various forms, but also fully upgrading to the science by connecting with various dimensions ranging from fashion, apparel, furniture, medical equipment, engineering mechanism. (Thanaboonsombat, 2018)

The researcher then came up with the idea of using Sukhothai woven fabrics to design lampshade products in order to develop them to have a contemporary design using Japanese origami folding techniques to decorate and creating a unique look from the existing designs. The decoration with various styles of folding and placement makes the lampshade products more modern. It is also a guideline for creating products development of Thai handicrafts and making that products to be persistent.



Figure 1 Example of Pearl Pattern fabric



Figure 2 Examples of products from Hat Siew woven fabrics

Objectives

- 1 . To design a lampshade product from Sukhothai woven fabrics with origami techniques.
- 2 . To study consumer satisfaction towards a lampshade product from Sukhothai woven fabrics using origami techniques.

Conceptual Framework

1 . The concept design of a lampshade from Sukhothai woven fabrics with origami technique.
2 .Concept and creative idea of the design of a lampshade.

Lampshade product from Sukhothai woven fabrics with origami technique.

To study consumer satisfaction towards a lampshade product from Sukhothai woven fabrics using origami techniques.

Scope of study

Product design of Sukhothai fabric woven Lampshade from Origami techniques. The researcher has set the scope according to the objectives as follows:

1. Scope of study product form of lampshade, The sample group used in the study is a member of the sewing and art community enterprise group of 15 people.

2. Scope of product development for lampshade from Sukhothai woven fabrics with origami technique of Khao Kaew Si Somboon Subdistrict, Thung Saliam District, Sukhothai Sewing and Art Community Enterprise Group. Taking into account the principles of product design determines the design elements by 5 experts with knowledge of sewing and design including the strength and convenience of use, unique, beauty and in terms of economy and usability.

3. Scope of product evaluation and prototype development for lampshade from Sukhothai woven fabrics with origami technique of Khao Kaew Si Somboon Subdistrict, Thung Saliam District, Sukhothai Sewing and Art Community Enterprise Group. Taking into account the design for the product, usability, populations and the sample group used in the study is 50 people from Khao Kaew Si Somboon Subdistrict, Thung Saliam District, Sukhothai Sewing and Art Community Enterprise Group and nearby communities.

Method

In designing product from Sukhothai woven fabrics with origami techniques, the researcher ordered the study to be consistent with the research objectives as follows:

1. Study the lampshade product patterns made from Sukhothai woven fabrics using origami techniques. The sample group was 15 members of the Sewing and Artificial Arts Community Enterprise group, Khao Kaew Srisomboon Subdistrict, Thung Saliam District, Sukhothai Province. The sample was selected using a purposive sampling. The study instrument was an in-depth interview with open-ended questions.

2. In designing product from Sukhothai woven fabrics using origami techniques, the researcher determined one table lampshade style, design sketches of the idea of laying the fabric patterns and decoration patterns. After that, 5 experts in sewing and design were asked. The study tool was an in-depth interview with open-ended questions.

3. Take the sketches of idea that have been evaluated by experts then create a lampshade from Sukhothai woven fabrics using the original origami techniques. Then evaluate the satisfaction of

consumers towards the product. The sample group was the people who interested in the lampshade made from Sukhothai fabrics using origami techniques. The sample group was from the Sewing and Artificial Arts Community Enterprise group and nearby Khao Kaew Srisomboon Subdistrict, Thung Saliam District, Sukhothai province, totaling 50 people from a purposive sampling. The tool used in the study was a five level satisfaction questionnaire.

Result/Finding

1. Study the patterns of the lampshade made from Sukhothai woven fabrics using origami techniques. The sample of 15 people were randomly selected from members of the Sewing and Artificial Arts Community Enterprise group, Khao Kaew Srisomboon Subdistrict, Thung Saliam District, Sukhothai. The results are summarized as follows. The members of the Sewing and Artificial Arts Community Enterprise group have good sewing skills but have never made lamps for sale. Not many members have ever used origami techniques. Most of the members had ever sewing, quilting and applique by hand. Everyone was interested in lampshade product design made from Sukhothai woven fabrics with origami techniques. It was suggested that a simple origami folding was needed and the folding pattern should be a symbol of the province, such as lotus flower or carp.



Figure 3 products from members of the Sewing and Art Community Enterprise Group.



Figure 4 Study of lampshade product model from Sukhothai woven fabrics with origami techniques

2. Design of Sukhothai lampshade fabric using origami techniques. Researcher have identified one table lamp style, 48 cm. wide and 72 cm. high. The researcher designed the idea of laying the fabric into 2 patterns: horizontal laying pattern and vertically laying pattern and there are 7 types of origami techniques including origami folding into a hat pattern, a six-petal flower, a four-petal flower, a turbine, a carp, a goldfish, and a rabbit. There are 3 types of decoration styles, including arranged in a row, group overlay and a balanced arrangement on the bottom. Then ask 5 experts in sewing and design.

The results are as follows. Most experts agree that laying out the horizontal pattern makes the lamp appear larger and feel more relaxed. All experts think that a six-petal origami folding pattern is appropriate because it resembles a lotus flower which is the provincial flower of Sukhothai province. And may be decorated with bright flowers which have the same color as the cloth used to cover the lamp with an arrangement of light colors to darks colors and decorated with lotus leaves stitching to make it look realistic. In terms of decoration patterns, most experts agree that group overlay pattern are appropriate because of their natural composition. The researcher had summarized and improved ideas from experts according to recommendations as follows: laying the fabric pattern horizontally, a prototype of the lampshade product made from Sukhothai fabrics using the origami techniques should be folded into a six-petal flower pattern, use a fabric in the same color as the fabric used to cover the lamp, stitching lotus leaves by choosing light and dark colors and arranged in group overlay style.



Figure 5 Horizontal laying pattern.

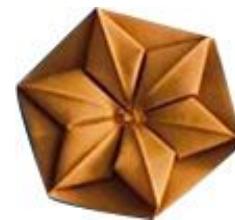


Figure 6 A six-petal origami folding pattern



Figure 7 Design of Sukhothai lampshade product using origami techniques.



Figure 8 Draft ideas based on expert recommendations



Figure 9 Folding origami



Figure 10 Lampshade product from Sukhothai fabrics weaving with original origami techniques

3. The satisfaction of the sample group of 50 people towards the prototype product were analysed by using statistics of frequency, percentage and mean was found that most of the respondents are 64 percent female and 36 percent male. Most are in the age of 40-49 years (40%), and the age between 30-39 are 24%. Most of them graduated in Junior High School (26%) and 22 % graduated in Junior high school, high school and vocational certificate. For the occupational information, most of them work as farmers (28 %) , followed by housewives (26 %) The satisfaction assessment of lampshade from Sukhothai fabrics using the origami techniques are shown in Table 1

Table 1 frequency, mean and satisfaction level towards Product design of Sukhothai fabric woven Lampshade from Origami techniques

Items	mean	Satisfaction level
1. Design		
- The design reflects the identity of Sukhothai.	4.08	high
- The composition of the pattern is related.	4.10	high
- The combination of patterns is suitable for any shape.	4.02	high
- Creativity	3.98	high
Total	4.04	high
2. Product		
- Strength	4.20	high
- The materials used are safe for the user.	4.26	highest
- The beauty of the product can increase the value of the product.	3.96	high
- Product color can attract the attention of the audience.	4.14	high
-The lamp is convenient to use.	4.36	highest
Total	4.18	high
3. Usefulness		
- The product is suitable for sale.	4.16	high
- Create an atmosphere for relaxation	4.10	high
- Suitable for reading books.	4.10	high
Total	4.12	high

Note: The satisfaction level was divided into the following ranges.

Average score 1.00 - 1.80 means the least level of satisfaction

Average score 1.81 - 2.60 means the low level of satisfaction

Average score 2.61 - 3.40 means the medium level of satisfaction

Average score 3.41 - 4.20 means the high level of satisfaction

Average score 4.21 - 5.00 means the highest level of satisfaction

From table 1 showed that the respondents were satisfied with The Design of Sukhothai fabric woven Lampshade from Origami techniques. In terms of materials, the overall level is at a very high average of 4.04. When considering each topic showed that the respondents were satisfied with the related composition of the pattern at a high level of average of 4.10. The design reflects the identity of Sukhothai at a high level of average 4.08. The combination of patterns is suitable for any shape at a high level of average 4.02 and lastly the creativity at a high level of average 3.98.

The Product, the overall level is at a very high average of 4.18, When considering each topic showed that the respondents were satisfied with the lamp is convenient to use with the highest of average of 4.36. High level of average of 4.26 is the materials used are safe for the user. The Strength of the product at a high level of average 4.20. The product colour can attract the attention of the audience at a high level of average 4.14. And finally the beauty of the product can increase the value of the product at a high level of average 3.96.

The overall level of Usefulness is at a very high average of 4.12. When considering each topic showed that the respondents were satisfied with the product is suitable for sale with a high level of average of 4.16. The create an atmosphere for relaxation and suitable for reading at a high level of average of 4.10.

Discussion

Product design of lampshade made from Sukhothai woven fabric using origami techniques was applied design principles with an emphasis on product identity in the community based on design principles to create uniqueness of TCDC (2008) because it is necessary to take into account the identity of the products and/or services. The identity of the place where the product or service is sold. (Environment) Communication identity (Communication) Behavioral identity (Behaviors).

This Sukhothai fabric design is consistent with previous research reports, namely (Burapajattana, 2016) Study of the development of souvenir textile products of Ban Hat Siaw community Sukhothai. The prototype included products of souvenirs in the category of appliances and decorations. From past studies, it was found that Sukhothai lampshade using the original origami techniques in addition to being a guideline for the development of home décor products that are suitable for the current

popularity, it is also an alternative for consumers who are prefer cultural products, including product development, community enterprises, creating value for the group's products to be accepted by consumers, differentiation of products, business production based on the original identity of the community that will create sustainability, driving and developing the community economy to be strong, able to be self-reliant which is consistent with (Jaiaeim andChandhasa. 2020) that bringing local wisdom products in Buriram Province " Phu Akanee fabrics" applied to design in order to add value, add options for the users. Promote income for local community producers and promote the identity of the use of Thai fabrics.

Suggestion

Researcher would like to provide suggestion as a guide to those who interested in the study as follows:

1. The prototype of Sukhothai woven lampshade fabric with origami technique should be developed into other products such as home decorations and souvenirs in order to add value to Sukhothai textiles.

2. Using other materials or textile manufacturing techniques such as water-repellent coating, scent, in order to have more stability, beauty and product differentiation.

3. Study of design trends, consumer needs such as material form, the use of color, production process to suit the popularity of consumers.

Conclusion

1. The demand for lampshade product made from Sukhothai fabrics with origami techniques: all of the sample groups are interested and want to fold origami in a way that is easy to fold. The pattern that the sample group wants to fold with origami techniques is the pattern that symbolizes the province such as a lotus flower or a carp.

2. The design of the lamp products made from Sukhothai woven fabrics using origami techniques, the horizontal laying of the fabric made the lamp look larger and relaxed. A six-petal flower origami fold is appropriate because it resembles a lotus flower which is the provincial flower of Sukhothai province. A suitable decorative arrangement is a group overlay pattern because the elements are arranged in a natural way.

3. The satisfaction of the consumers in the sample group towards the prototype product: the composition of the patterns that are related to each

other are at a high level, with an average of 4.10. The ease of use of the lamp are on the highest level at 4.36 average. And the benefit of the product is found that it is suitable for sale in the high level with the mean of 4.16.

Acknowledgement

Design of Sukhothai lampshade product using origami techniques is a part of the research project on the development of home furnishings made from origami fabric by the Sewing and Artificial Arts Community Enterprise group Khao Kaew Srisomboon Subdistrict ,Thung Saliam District, Sukhothai province has been accomplished well by receiving patronage from many parties as follows:

Thank you to Thailand Science Research and Innovation (TSRI) that supports the budget for the project implementation from the fiscal year 2020.

Thank you to Rajamangala University of Technology Phra Nakhon and Phongsakorn Chakbuth, the village headman of Village No. 5., Mrs. Phatsar Madi, leader of the Sewing and Artificial Arts Community Enterprise group, members of the Sewing and Artificial Arts Community Enterprise group, members of Khao Kaew Srisomboon Thung Saliam District, Sukhothai province. Thank you to everyone who attended the event as well.

References

- Anunvrapong, A., Noodang, P., Srichamon, P. & Chantarasamak, C. (2018). The Development of Wicker Wall Lamp from Talipot Palm Leaves. *Ratchaphruek Journal*, 16(1), 139-148.
- Burapajattana, J. (2016). Garment and Textile Developing by Ban Hadsew community Sukhothai. *Art and Architecture Journal Naresuan University*, 7(1), 146-159.
- Jaiaeim, A., & Chandhasa, R. (2020). The Lamp Design from rag textile waste in Thailand. Ban Jren Suk Buriram. *Journal of Asia Art & Design*, 1(1), 59 - 107.
- Royal Institute Dictionary. (2013). *Royal Institute 2011 His Majesty On the occasion of 7 rounds of the auspicious royal ceremony on December 5, 2011*. Bangkok, Thailand: Siriwatthana interpret Co.ltd.
- Sensod, P. (2014). Origami Art of a fun activity. *Journal of Scient service*, 62(196), 46 -47.
- Sirisan, P., Baikulab, N., Panpeth, W. & Klinkled, W. (2017). *The Lamp Design from Vetiver to represent Phisanulok province*. In Proceedings of the raduated Education National thesis Northern Rajabhat University (2395 - 2402). Phibulsongkam Rajabhat University.
- TCDC. (2008). Design and You: *Why have to decide-to create character*. Retrieved from <http://www.tcdc.or.th/articles/others/16856>.
- Thanaboonsombat, B. (2018). *Origami Chaladlom*. Nonthaburi, Thailand: Documentary.

Interview

- Madee, P. (2018, November 15). Personal Communication [personal interview]