BIS Economics and Business

Volume 2 2025 | DOI: 10.31603/biseb.279
6th Borobudur International Symposium on Humanities and Social Science (BIS-HSS) 2024

UNIMMA PRESS
Universitas Muhammadiyah Magelang

The development of batik stamping tools to support micro, small, and medium enterprises in pela tourism village, East Kalimantan, Indonesia, to support sustainable river fish conservation

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Abstract

Batik MSMEs that the activity is on the water, such as in Pela Village, East Kalimantan, where the river flow below is also a typical habitat for East Kalimantan's endemic fish and its existence must be preserved, so special treatment is needed, namely helping to maintain the safety of water content in the river that is its habitat. So, in the process of making batik, it is necessary to use environmentally friendly materials. Environmentally friendly dyes are easy to get, but for environmentally friendly batik wax materials are still very difficult to get. For this reason, a batik stamp tool is needed that in the dyeing process does not require batik wax material. The method used is Quality Function Development (QFD) which consists of the stages of product planning, assembly, process planning, and process control. After the QFD stage is carried out, the result obtained is a stamp tool that has a barrier component in the form of a motif mold that clamps the fabric from the top and bottom, stainless steel material, dimensions 280 cm x 140 cm x 125 cm. With the existence of batik printing tools with the technique of clamping cloth from above and below, it is very helpful for batik MSMEs that are above the sea as a habitat for endemic fish that are being preserved, greatly supporting the efforts of the local government in sustainable efforts in the field of nature conservation.

Published:
May 2, 2025

Selection and Peer-review under the responsibility of the 6th BIS-HSS 2024 Committee

Keywords

Design innovation, Batik stamp, MSME, Sustainability, Endemic animals

Introduction

Pela Village, Kota Bangun District, Kutai Kartanegara Regency, East Kalimantan, Indonesia, is located in the interior of a tributary of the Mahakam River. This village offers the sensation of tourism on the river and is one of the oldest villages in the Kota

Bangun District, Kutai Kartanegara Regency. Pela Village is inhabited by 90 percent of the community who work as fishermen. One of the uniqueness of Pela Village is river tourism where there are endemic animals, namely pesut fish which are freshwater dolphins that have begun to be rare. Pela tourism village has a huge tourism potential because in addition to natural beauty and cultural richness, Pela Village also offers various other interesting tourist activities such as ecotourism, namely exploring mangrove forests, watching birds and learning about nature conservation. In addition to ecotourism, there is adventure tourism, namely rafting on the Makan River, tracking in the forest or fishing. And there is also cultural tourism, namely visiting traditional villages, learning to make handicrafts and also participating in traditional ceremonies. Of the many endemic animals in Pela Village, pesut fish is an icon that is widely used for branding Pela Tourism Village.

One of the foundations that focuses on the preservation of pesut fish is the RASI Conservation Foundation (Rare Aquatic Species of Indonesia) which has started conducting research and conservation on pesut fish since 1999. One of the efforts to introduce pesut fish to the community is with batik design media with pesut fish motifs. And in addition to being one of the media to introduce pesut fish to the community, the RASI Conservation Foundation also hopes that batik activities will become one of the typical souvenirs of Pela Village and become one of the activities to improve the economy of the people of Pela Village, so that the RASI Conservation Foundation funds batik training activities for the people of Pela Village with academics as training resource persons. Because batik activities are carried out on the Mahakam River under which pesut fish live as an endemic animal that is preserved, so all stages must pay attention to the safety and security of pesut fish by choosing safe materials.

In the batik stage, several main ingredients are needed, namely batik wax, dyes and color locks. Of the three materials, batik wax materials are still not widely available which are made of natural materials so that at the stage of sagging batik wax needs special treatment, namely the residual water for filtering batik wax cannot be just thrown away in the river. There is a fabric dyeing technique that does not require a color barrier with wax, but the barrier uses natural materials such as wood, namely itajime type shibori, but the appearance of the motif and color can be less clear and varied. With the above background, a stamp tool is needed to print the pesut fish motif on a cloth that is completely safe for the preservation of pesut fish which has begun to decrease. From the Pela Village tourism awareness group, namely 3B and also from the RASI Conservation Foundation, they want the process of making pesut fish motifs on fabric, all materials are natural and safe for the sustainability of pesut fish in the Mahakam River flow.

Method

Data collection and data processing are carried out to obtain the necessary information and data, with the following stages:

1. Preliminary Survey, a preliminary survey is conducted to find out what variables are lacking in the current design of the tool. This survey was conducted on 5 new batik makers in Pela Village.
2. Interviews, interviews are conducted with new batik makers in Pela Village to find out the wishes and needs of customers or Voice of Customer (VoC)
3. The results of the Voice of Customer (VoC) are then included in a questionnaire that is distributed to new batik makers in Pela Village to determine the value of the satisfaction, interest, and hope variables (goal).
4. House of Quality (HOQ) Stage
5. Make a proposal design.
6. Conclusion

Results and discussion

Data collection

Data collection is a series of activities to find information about variables that will be used as research objects through interviews, observations and questionnaires so that the necessary data can be obtained and used for the design of environmentally friendly pesut fish motif printing tools. Before designing the product, a survey and interviews were first conducted on the new batik in Pela Village that has been used which will later be poured into a questionnaire.

Table 1. Customer Needs Statement

It	User Statement	Interpretation of Needs
1	The process of stamping on the fabric is a bit difficult to fit one myth with the next motif	Stamping tools that do not need to estimate the exact position of the motive
2	The coloring process uses limited color	Stamping tool that can provide convenience in using a variety of colors
3	Color locking process that sometimes unevenly results in color	Easy stamping tool during color locking process
4	Several supporting devices that are quite a lot	Compact stamp tool
5	The treatment of used water for sagging is a bit complicated because it should not be disposed of in the river water flow	Stamping tools that do not require batik wax material

Voice of customer

The next stage carried out in the Quality Function Deployment (QFD) method is to identify consumer needs for the desired product attributes of fish drying and smoking equipment.

Table 2. Customer Requirement

Performance	Easy-to-operate motive stamp tool
Design	Simple motif stamp tool
Security	Motif stamp tool that does not need wax material

Based on the results of Voice of Customer (VoC), data processing is carried out with House of Quality (HOQ) starting with a planning matrix.

Table 3. Planning Matrix

It	Attribute	1	2	3	4	5	Target
1	Stamping tools that do not need to estimate the exact position of the motive		*		#		4
2	Stamping tool that can provide convenience in using a variety of colors	*			#		4
3	Easy stamping tool during color locking process		*		#		4
4	Compact stamp tool	*			#		4
5	Stamping tools that do not require batik wax material	*			#		4

The preparation of the product concept for environmentally friendly motive stamping tools was made by referring to the Quality Function Deployment (QFD) stages that have been carried out, especially referring to the technical needs desired by consumers. The product concept for this eco-friendly motif stamp tool is then poured out in the form of design drawings.

Conclusion

The design obtained is based on the needs of users whose information is obtained in Voice of Customer (VoC), so it is expected to be an environmentally friendly motive stamp tool that precisely meets the needs of batik makers. The design produced in this study has met the needs of users, namely providing convenience and safety.

The conclusion of the results of the research on the design of environmentally friendly motif stamps is based on the results of the recapitulation of the calculation of the repair ratio, the largest repair ratio value is found in the attribute, namely with a repair ratio value of 3.50, this is because environmentally friendly motif stamp tools are commonly used, less safe for pesut fish and less easy in operation.