Designs Samarinda's Typical Batik Kansei Engineering as an Application for Design Innovation for Batik Craft MSMEs

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ABSTRACT

The handicraft industry in Indonesia is one of the three subsectors that contribute significantly to the country's GDP. One of the crafts that has a large number of micro-scales is batik crafts. It is necessary to develop batik motif designs so that micro-scale batik MSMEs can still survive the competition. Batik MSMEs in Samarinda are no exception to always develop their motif designs based on consumer choices. The purpose of this study is to find out the kansei factors of Samarinda's typical batik motif design as a direction in the development of batik motif design. The method used is kansei engineering, starting from the initial design of the research, the collection of kansei words, the preparation of questionnaires, the distribution of elementary school I questionnaires, and statistical analysis I. The results obtained are that consumers choose batik motif designs because of the pride factor and also because the design is made beautiful and modern, but does not have to follow the most trendy. And also for the problem of fabric material does not have to be the most delicate, but the important thing is that it is quite comfortable to wear.

Keywords: design innovation, batik, kansei engineering, Samarinda, MSME

INTRODUCTION

Facing increasingly fierce competition, SMEs are required to always improve quality and always innovate their products. Several previous studies that have been conducted by other parties have concluded that innovation can improve the quality and economic value of a product and the company's innovation does not directly affect the company's performance, but has a significant effect on product quality. The quality of the product has a significant effect on the company's performance.

Typical handicrafts in East Kalimantan consist of various products, one of which is batik fabric. Batik fabric has experienced development in its application, namely for fashion products, but there are still few batik SMEs

that develop their products. In a previous study that has been conducted by another party, "Application of the Quality Function Deployment (QFD) Method for the Development of East Kalimantan Typical Batik Motif Design" stated that the attributes of the design of typical East Kalimantan batik motifs are: attractive batik motifs, the shape of batik motifs has characteristics of East Kalimantan, a combination of flora motif colors (tendrils) and medium and small motif sizes. The highest attribute value for the level of importance is an attractive batik motif, with an average score of 4.77. And for the lowest interest attribute is the size of medium and small motives with a value of 3.05. The technical response for the development of batik motif design typical of East Kalimantan is the selection of colors, balance of motifs, proportions, composition (Noviana & Hastanto, 2014).

Recent product development trends have led to a product that is designed based on customer needs (Nagamachi, 2006). In this concept, the company will explore the wants and needs of customers to then turn them into a useful product. However, when choosing a product, customers are not only based on logical reasons such as product function or price, but furthermore, emotions and feelings when seeing and feeling the product are also important factors in choosing a product. These emotions, feelings and desires and desires hidden in a person's mind are further expressed as affective factors. To translate the affective factor of the customer, Nagamachi introduced a method called Kansei engineering. Kansei engineering is a method to translate a person's feelings, emotions, and impressions of the desired product (Nagamachi & Mohd Lokman, 2011).

Research on the development of batik design has been carried out by (Srikandini et al., 2012) "Engineering of Jetis Sidoarjo Written Batik Design through the Implementation of the Kansei Engineering Method" concluded that the image or feeling of customers in choosing Jetis written batik is determined by the individual consumer's interest in a batik described in the kansei words "attract attention" followed by "classy", "proud", "detailed", "artistic", "elegant", "comfortable", "bright", "varied", "unique", and "beautiful". And from the results of the crucial analysis of the wallis, the characteristics of the new Jetis written batik design were obtained, namely: motif characteristics: geometric, main ornament: flower 2, filler ornament: lung-lung an, number of scents: 3, primary color: yellow, secondary color: brown. The others research that has discussed kansei engineering methode include (Delfitriani et al., 2023; Hartono, 2020; Haryono & Bariyah, 2014; Hasil et al., 2021; Lei et al., 2015; Najib et al., 2017; Sari et al., 2023; Shergian & Immawan, 2015; Shyafary & Andansari, 2019; Suzianti & Aldianto, 2020; Yuniar, 2017)

Problems:

The problem in this study is that there has not been much development of East Kalimantan batik design based on design characteristics (both motifs, main ornaments, filler ornaments, number of ingredients, fabric color as primary color and motif color as secondary color) that are desired and needed by customers. The formulation of the problem is: 1. What is the preference of the people of East Kalimantan towards the current East Kalimantan batik design 2. How is the customer relationship with East Kalimantan batik

Special Purpose:

Special Purpose 1. Knowing the preferences of the people of East Kalimantan towards the current East Kalimantan batik design 2.Knowing the customer kansei towards East Kalimantan batik design

RESEARCH METHODOLOGY

The methods in this study are as follows:

1) Initial design of the study

At this stage, the target group, niche market and specifications of the new product will be identified

2) Collection of kansei words

Kansei words can be adjectives, nouns, verbs and sometimes sentences; Such as beautiful, elegant, premium,

simple, big, strong, bright and others. This stage is part of the Category Classification method which is a structure tree from the main event to the other parts of the event.

3) Questionnaire preparation

At this stage, the kansei words that have been collected previously are paired with the opponent of the kansei words.

4) Distribution of elementary school I questionnaires

This stage is carried out by distributing questionnaires to customers and sellers.

5) Statistical analysis I

The selection of kansei I words was carried out by several statistical methods such as validity tests, reliability tests and factor analysis. The results of this stage may be a reduction in kansei word pairs, so that the kansei word pairs that will be compiled for the next questionnaire are reduced.

FINDINGS AND DISCUSSION

In this study, it was determined:

1. Target group

Based on interviews with Samarinda and Sidoarjo batik entrepreneurs, as well as literature studies on batik, the division of market segmentation is based on age; late adolescents 17-25 years old and early adults 26-35 years old and gender; men and women.

2. Niche

The advantage of Samarinda batik is that the motif is different from other district batiks in East Kalimantan and is quite fairly new inaugurated in 2014, so the target market of Samarinda batik is a market that wants to dare to try something new. The advantage of Sidoarjo batik is the development of batik motifs in accordance with regional development.

3. Kansei words

The collection of Kansei Words is carried out over fourteen days through:

Interview and questionnaire filling interviews conducted with Samarinda and Sidoarjo batik customers were conducted both formally-informally and directly-indirectly in various locations such as universities, housing, offices and others. Questionnaire filling was also carried out on 84 customers.

Fashion Designer

A consultation was carried out with 1 East Kalimantan batik designer, Mrs. Fanti who is also the owner of Hesandra boutique.

From the results of the collection, a total of 66 Samarinda batik Kansei words were obtained which were formed in K-Cards before finally being grouped into category classification and designed into a Differential Semantic 1 questionnaire.

Category Classification

Category Classification is a method to reduce data by creating levels from the main concept to the sub-level concept. In this study, from the 39 kansei words of Samarinda and Sidoarjo batik that were found, the category classification was made into 10 groups where each group contained about 1 to 10 kansei words. The

classification of this category is determined based on the grouping of similar words.

In the initial stage, a grouping of the kansei words obtained is made. This grouping is carried out by means of similarity and proximity of the meaning of words according to terms in the field of design. The following table is a grouping formed with one main word (top-concept) at the top representing the group of words in the column. The Main Words are selected based on the largest percentage chosen by the respondents.

Differential Semantic Questionnaire 1

In this questionnaire, respondents will assess the desired Samarinda batik criteria by providing an assessment of kansei words pairs with the Semantic Differential (SD Evaluation 1) technique. The kansei words that make up the SD 1 questionnaire are the main concept of category classification that has been carried out previously. The following is a pair of kansei words used in the elementary school I questionnaire.

Statistical Processing of Questionnaire for SD I Batik Motif Samarinda

Validity Test

The validity test aims to determine the validity of a questionnaire. A questionnaire is said to be valid if the question is able to reveal something that is intended to be measured in a study.

The results of the validity test conclusion below, it can be seen that all variables of batik samarinda are valid because they have an r calculation > r table and have a significance of less than 0.05 (error rate of 5%).

Reliability Test

The reliability test shows the consistency and stability of a score (measurement scale). Reliability differs from validity in that it focuses on consistency issues and pays more attention to accuracy issues. The step in testing reliability is to look at the crobach alpha value. If the value of Cronbach alpha ≥ 0.6, the variable is said to be reliable (Ghozali, 2002). From the calculation results, the reliability value of each condition is 0.846 so it can be concluded that all variables in the questionnaire are said to be reliable.

Factor Analysis

The output table of the KMO and Bartletts Test shows that the Kaiser Meyer Olkin Measure of Sampling (KMO MSA) value is 0.817, greater than 0.50, and the Bartlett's Test of Sphericity (Sig.) value is 0.000 < 0.05, so the factor analysis in this study can be continued because it meets the requirements.

Measures of Sampling Adequeacy (MSA)

From the MSA Requirements Test with SPSS, it is obtained in the AntiImage Correlation line that each of the researched:

1. Pride of 0.815
2. Beautiful by 0.792
3. Comfortable of 0.852
4. Unique by 0.886
5. Elegant by 0.849
6. Modern by 0.791
7. Many Colors of 0.806

8. Smooth by 0.865
9. Fashionable by 0.774
10. Formal of 0.732

The requirement that must be met in the factor analysis is an MSA value > 0.05. From the above results, it was obtained that the MSA value for all the variables studied was > 0.05, so that the second requirement in factor analysis was met.

The table Communalities above shows the value of the variable being studied whether it is able to explain the factor or not. A variable is considered to be able to explain the factor if the Extraction value is greater than 0.50. Based on the output table above, it is known that the extraction value for the Unique variable and many colors is less than 0.50. Thus, the variable must be excluded from the test and the factor analysis step must be repeated from the beginning without including variables that do not meet the requirements of communality.

The results of the calculation in this study show that the KMO value meets the requirements because it has a value above 0.5, which reaches 0.792. Thus, the requirements of KMO are met because they have a value above 0.5.

After the second calculation with SPSS software, the Barlett Test of Spehricity value was 260.495 with a significance of 0.000. Thus, the Barlett Test of Spehricity meets the requirements because the significance value is below 0.05 (5%), and the kansei word variable is considered feasible and can be used for the next stage of analysis.

It is known that the MSA values of each of the studied are as follows:

1. Pride of 0.822
2. Beautiful by 0.805
3. Comfortable by 0.841
4. Elegant by 0.823
5. Modern by 0.754
6. Smooth by 0.859
7. Fashionable by 0.721
8. Formal of 0.710

The requirement that must be met in factor analysis is an MSA value > 0.50. From the above results, it is known that the MSA value for all variables studied is > 0.50, so the second requirement in factor analysis is met.

The table Communalities above shows the value of the variable being studied whether it is able to explain the factor or not. A variable is considered to be able to explain the factor if the Extraction value is greater than 0.50. Based on the out put table above, it is known that the extraction value for all variables is above 0.50. So it can be concluded that all variables can be used to explain factors.

The total Variance Explained table shows the value of each variable analyzed. In this study, there are 8 variables, meaning that there are 8 components analyzed. There are two types of analysis to explain a variant, namely Initial Eigenvalues and Extraction Sums of Squared Loadings. In the Initial Eigenvalues variant, it shows the factors that are formed. When all factors are summed, it shows the number of variables (i.e. 3.911 + 1.218 + 0.772 + 0.662 + 0.558 + 0.361 + 0.327 + 0.242 = 8 variables). While in the Extraction Sums of

Squared Loadings section shows the number of variations or the number of factors that can be formed, in the output results above there are 2 (two) variations of factors, namely 3,911 and 1,218.

Based on the Total Variance Explained output table in the "Initial Eigenvalues" section, there are 2 (two) factors that can be formed from the 8 variables analyzed. Where the requirement to be a factor, the Eigenvalues value must be greater than 1. The Eigenvalue Component 1 value is 3.911 or > 1, then it becomes factor 1 and is able to explain 48.888% of the variation. While the value of Eigenvalue Component 2 is 1.218 or > 1, it becomes factor 2 and is able to explain 15.222% of the variation. If factor 1 and factor 2 are summed, it can explain 64.110% of the variation.

This Component Matrix shows the correlation value or relationship between each variable and the factor that will be formed. For example: from the output above, it can be seen that the proud variable, namely the correlation with factor 1 is 0.686, and the correlation with factor 2 is -0.511; comfortable variables, namely the correlation with factor 1 is 0.768, and the correlation with factor 2 is -0.300; Elegant variables, namely the correlation with factor 1 is 0.734, and the correlation with factor 2 is -0.014; fine variables, namely the correlation with factor 1 is 0.704, and the correlation with factor 2 is 0.258; the fashionable variable, namely the correlation with factor 1 is 0.710, and the correlation with factor 2 is 0.493; The formal variable, namely the correlation with factor 1 is 0.577, and the correlation with factor 2 is 0.603.

To ascertain which factor a variable belongs to, it can be determined by looking at the value of the largest correlation between the variable and the factor (Component) that is formed. How to read the results of the rotation model factor analysis, you can follow this explanation.

1. Variable Proud. The correlation value of this variable with factor 1 = 0.804 and factor 2 = 0.133, because the correlation value of factor 1 > factor 2, then the Proud variable belongs to the factor 1 group

2. Beautiful variables. The correlation value of this variable with factor 1 = 0.827 and factor 2 = 0.057, because the correlation value of factor 1 > factor 2, then the Indah variable belongs to the factor 1 group

3. Variable Convenient. The correlation value of this variable with factor 1 = 0.771 and factor 2 = 0.291, because the correlation value of factor 1 > factor 2, then the Comfort variable belongs to the factor 1 group

4. Elegant Variable The correlation value of this variable with factor 1 = 0.556 and factor 2 = 0.494, because the correlation value of factor 1 > factor 2, then the Elegant variable belongs to the factor 1 group

5. Modern Variable. The correlation value of this variable with factor 1 = 0.555 and factor 2 = 0.481, because the correlation value of factor 1 > factor 2, then the Modern variable belongs to the factor 1 group

6. Smooth variables. The correlation value of this variable with factor 1 = 0.350 and factor 2 = 0.663, because the correlation value of factor 2 > factor 1, then the Subtle variable belongs to the factor 2 group

7. Fashionable Variable. The correlation value of this variable with factor 1 = 0.197 and factor 2 = 0.841, because the correlation value of factor 2 > factor 1, then the Modis variable belongs to the factor 2 group

8. Formal Variable. The correlation value of this variable with factor 1 = 0.025 and factor 2 = 0.834, because the correlation value of factor 2 > factor 1, then the Formal variable belongs to the factor 2 group.

CONCLUSION

By looking at the discussion above, the conclusions that we can draw in this factor analysis are as follows:

Factor 1 Variables: Proud, Beautiful, Comfortable, Elegant and Modern

Factor 2 Variable: Smooth, Fashionable, Formal

The Component Transformation Matrix shows that in component 1 the correlation value is 0.743 > 0.50, and in

component 2 the correlation value is 0.743> 0.50. Since the correlation value of all components > 0.50, it can be concluded that these two factors are feasible to summarize the eight variables analyzed.

From the results of the analysis of Samarinda batik motif factors, it is known that consumers in choosing Samarinda batik motifs based on the image or feeling of the product are influenced by 2 factors that explain the total variance of 64.110% with details:

1. Emotional appeal (Proud and Elegant) and design (Beautiful, Comfortable, Modern) with a variance of 48.888%.

2. Material and Latest with a variance of 15.222 %.

A deeper explanation is that consumers choose batik motif designs because of the pride factor and also because the design is made beautiful and modern, but it does not have to follow the most trends. And also for the problem of fabric material does not have to be the most delicate, but the important thing is that it is quite comfortable to wear.

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