HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH: PROSIDING

Judul Jurnal Ilmiah (Paperl) : Packaging Design Concepts as Attributes of Product Diversification Using Kansei Engineering Approach in SMEs Scale Cocoa Industry in South Sulawesi

Penulis Jurnal Ilmiah : Lamatinulu; Muhammad Dahlan; Mardin
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Kategori Publikasi Jurnal Ilmiah : (beri √ pada kategori yang tepat)
- [✓] Jurnal Ilmiah Internasional / internasional bereputasi
- [ ] Jurnal Ilmiah Nasional Terakreditasi
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Makassar , 20 Mei 2022
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LEMBAR
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KARYA ILMIAH: JURNAL ILMIAH

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Makassar , 18 Mei 2022
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Packaging Design Concepts as Attributes of Product Diversification Using Kansei Engineering Approach in SMEs Scale Cocoa Industry in South Sulawesi

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Abstract:- Packaging is a product attribute that is very important to maintain product quality and has a role as an attraction for consumers. Packaging also serves to protect the product and as a marketing medium. The purpose of this study was to identify the aspects needed in designing the packaging attributes of processed cocoa products. The method used in this research is the Kansei Engineering approach. The instrument used in data collection is a questionnaire to identify Kansei words which are used to develop the basic concept of product packaging design as a result of diversification. From the result of this research is the formulation of the concept of packaging design for industrial chocolate products on an SME scale based on Kansei Word. The initial results of collecting Kansei words were found to be 242 words. The results of the analysis of the similarity of meanings and the grouping of Kansei words, it was found that 15 Kansei words could be used in formulating the concept of packaging design for diversified chocolate products.

Keywords:- *Kansei Engineering, Packaging, Chocolate, Kansei Word.*

I. INTRODUCTION

Small and Medium Enterprises (SMEs) are one of the important business sectors to support economic progress for developing countries such as Indonesia [1]. In this regard, efforts are needed to improve the performance of the SME scale industry. One type of scale industry that needs to be developed in Indonesia is the cocoa processing industry because Indonesia is one of the cocoa-producing countries in the world. Based on this, there are several regions in South Sulawesi that have developed SME-scale cocoa industries such as in the districts of North Luwu, Palopo, and Makassar.

In supporting the improvement of the performance and competitiveness of the cocoa industry products, it is necessary to make efforts to carry out product diversification variations. One of the important attributes needed in increasing the attractiveness of the product so that it is in demand by customers is the packaging. Packaging has a function in addition to protecting the product, it is also an aspect that can create a first impression for consumers and can be a stimulant for consumers to buy a product. The basic concept of packaging design for the chocolate industry is expected to be oriented towards maintaining safety, food quality, and being environmentally friendly.

This packaging design is an important strategy to support increasing the selling value of the product. The basic concept of an ideal product packaging is oriented towards preventing loss, maintaining quality, and adding value to the product. With the development of the concept of packaging design to increase product competitiveness, it is necessary to pay attention to the factors of packaging durability, packaging structure, packaging diversity, and packaging innovation [2].

By paying attention to the importance of packaging, the product diversification efforts carried out by the SME-scale cocoa processing industry in South Sulawesi are required to formulate the basic concepts of packaging development design to support increasing product competitiveness. The approach that can be used in formulating the basic concept of packaging design is the Kansei Engineering method. The Kansei Engineering method is an engineering approach that translates psychological feelings into product design parameters [3].

This method approach is carried out by identifying the attributes needed in designing chocolate packaging based on the opinions and desires of consumers with a feeling approach. In compiling the formulation of the basic concept of packaging design development, it is done by asking for responses that come from an assessment based on consumer feelings. The purpose of this study was to compile a description of the formulation of the design concept for the development of packaging for the chocolate industry based on Kansei word.

II. RESEARCH METHOD

A. Place and location of research

The object and location of this research are the SME-scale cocoa processing industry in South Sulawesi, namely Ratona Small Industry in Palopo, CV Kasih Sayang in Makassar, and KUB Sibali Resoe in Masamba, North Luwu. This research was carried out by conducting surveys, interviews with chocolate industry managers, and distributing questionnaires.

B. Data Collection

Data was collected through a literature study of interviews with the owners and managers of the chocolate industry, distributing questionnaires to 101 respondents. As for the

sample, respondents are consumers of chocolate products. The data collection method is carried out to collect Kansei Word which will be analyzed to serve as important elements in formulating the formulation of the packaging design concept.

C. Data Processing

➢ Test of Data Validity and Reliability

To be carried out to test the extent to which the questionnaire measuring instrument used in this study can be declared valid or valid.

Validity and reliability tests were conducted to assess the feasibility and accuracy of the instruments used in this study. The results of the validity and reliability tests will be used to select and determine that the Kansei word attributes contained in the research instrument can be used.

➢ Descriptive Statistical Analysis

To determine the Kansei Word selected and used in preparing the formulation of the Kansei Engineering-based packaging design concept, descriptive statistical analysis was carried out to determine the weight value of consumer respondents' acceptance of the packaging design attributes stated in the Kansei word. This method approach can be used to determine the weight value based on the average value as has been applied by previous researchers [4,5,6,7]. Assessment of consumer acceptance of the Kansei word alternative desired by consumers as an attribute of good chocolate packaging is carried out with a Likert scale rating level. The rating scale used is 1 = disagree, 2 = disagree, 3 = agree, 4 = strongly agree and 5 = strongly agree.

Based on the results of the validity and reliability test of the data followed by descriptive statistical analysis, the Kansei word attributes contained in each question item in the questionnaire can be trusted and the accuracy level is believed. This became the basis for determining the Kansei word to be used in drafting the chocolate product packaging design concept.

III. RESULT AND DISCUSSION

A. Kansei Word Data (Kansei Word)

Based on the results of literature studies, surveys, interviews and the distribution of the initial questionnaire, 242 Kansei words can be collected. Kansei words collected in the first stage were analyzed to find Kansei words that have the same meaning. After finding the Kansei words that have the same meaning, the elimination step is carried out for all words that have the same meaning. Based on the elimination stages, a number of kansei words are determined which will be elaborated into the elements of the questions that will be asked to the respondents. Based on the results of data collection about the Kansei word desired and approved by consumers, the validity and reliability of the data were tested. Based on the results of the data test, it is determined that there are 15 Kansei words as shown in Table 1.

Table 1. *Kansei Word*

No.	Kansei Word Elimination	Code
1	Beautiful, unique, and interesting	KW01
2	Hygienic and safe	KW02
3	Color varies	KW03
4	Simple/Practical	KW04
5	Safe material	KW05
6	Durable protect the product	KW06
7	Made of waterproof	KW07
8	Various shapes and sizes	KW08
9	Environmentally friendly	KW09
10	Material can be recycled	KW10
11	Loading product composition information	KW11
12	Loading quality assurance information	KW12
13	Picture of chocolate identity	KW13
14	Clean, neat, elegant, and modern	KW14
15	Patterned images of local wisdom	KW15

B. Test of Data Validity and Reliability

Based on the results of the Kansei word selection, the data validity test was carried out on the 15 selected Kansei words. Based on the results of the data validity test, all attribute items related to Kansei words in the questionnaire filled out by 101 respondents were all declared to meet the validity standard because the calculated r-value was greater than r table 0.2552. This shows that 15 Kansei words have been declared valid, have data uniformity, and can be used as data to analysis in determining Kansei words that will be used in designing the basic concept of developing chocolate product packaging for the SME-scale chocolate industry. The results of the data validity test related to the collected Kansei words can be seen in Table 2.

Table 2. Validity Test

No	Kansei Words	Value of r count	Results
1	Beautiful, unique, and interesting	0,773	Valid
2	Hygienic and safe	0,725	Valid
3	Color varies	0,595	Valid
4	Simple/Practical	0,752	Valid
5	Safe material	0,847	Valid
6	Durable protect the product	0,840	valid
7	Made of waterproof	0,853	Valid
8	Various shapes, and sizes	0,730	Valid
9	Environmentally friendly	0,860	Valid
10	Material can be recycled	0,709	Valid
11	Loading product composition information	0,778	Valid
12	Loading quality assurance information	0,755	Valid
13	Picture of chocolate identity	0,801	Valid
14	Clean, neat, elegant, and modern	0,817	Valid
15	Patterned images of local wisdom	0,556	Valid

After testing the validity of the data and the data is declared valid, then proceed with the reliability test on the data of 15 Kansei words, the results are as shown in Table 3.

Table 3. Reliability Test

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0,946	0,948	15

Based on the results of the reliability test, it shows that the research data is reliable because the Cronbach's Alpha value is 0.946 > 0.7. The results of the reliability test show the Cronbach's Alpha value of 0.946 which means that this data is reliable because > 0.7. This shows that the data collected in this study is quite good and reliable in measuring what it is supposed to measure (reliable).

C. Descriptive Statistical Analysis

In connection with the data collected is declared valid and reliable, data analysis can be carried out with a descriptive statistical approach to obtain the average weighted value of the level of approval or consumer acceptance of the Kansei word which will be used as the basis for developing the concept design for the development of product packaging variations. The results of the average weight of consumer acceptance of the Kansei word that will be used in the design of product development concepts can be seen in Figure 1.

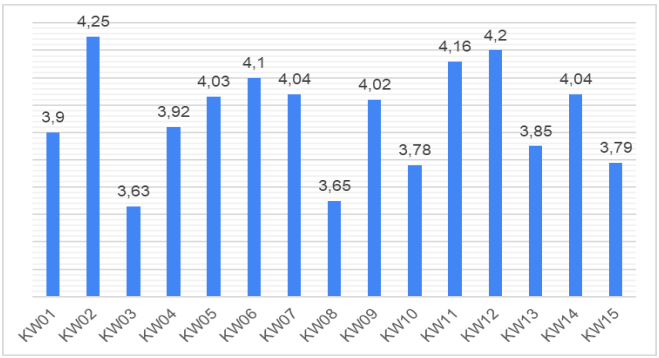

Figure 1. Average weighted value of consumer acceptance

Based on Figure 1, shows that the acceptance value of respondents or consumers towards Kansei Word is at the level of agreeing and strongly agreeing because there is a range of weight values between 3.63-4.25. This implies that 15 Kansei words can be used to formulate the concept of chocolate packaging. In the design of the Kansei word-based packaging design concept, the author only determines the Kansei word that is deemed necessary to be applied to the chocolate processing industry based on the results of interviews with managers and owners of the chocolate industry.

D. Description of the Kansei word-based packaging design concept

Based on the established kansei word, several chocolate packaging concepts can be formulated to support product diversification as follows:

- Unique and attractive packaging. Unique and attractive packaging is certainly expected to attract buyers. Through the addition of elements that give beauty and uniqueness to the packaging, it can provide a special attraction for customers. The existence of a unique dimension in packaging with attractive aesthetic elements can contribute to customer utility [8].
- Hygienic and safe packaging. Regarding the safety of products produced in the food industry, it is expected to use materials and components of product parts such as packaging to be hygienic because this is related to the safety of consumers and the industry itself [9].
- Packaging with various colors. Based on the Kansei word related to color variations in designing packaging to support product diversification and innovation variations, it is better if the packaging design needs to be supported by attractive color combinations. This is important because the color scheme on the product packaging can affect the customer's purchasing preferences [10, 11, 12].
- Simple and practical packaging. This shows that the packaging that is made should be seen as practical, such as easy to carry, easy to open, and can be pocketed.
- Packaging must be made of safe materials. Packaging made for the SME-scale chocolate industry should be made of safe materials and do not contain substances that are harmful to health.
- Durable packaging protects the product. The packaging made should be designed as well as possible so that it can function to protect chocolate products so that they can last a long time.
- Water-resistant packaging. Based on the wishes of consumers of chocolate products in the SME-scale cocoa industry, it is better to make product packaging so that they can use water-resistant materials so that the product can be protected so that it does not get damaged quickly.
- Packaging in various forms. Based on the Kansei word regarding the form of packaging, it is deemed necessary for the SME-scale chocolate industry to make packaging in various forms. This is an important factor in attracting consumer interest because variations in shapes with attractive color combinations can affect consumer purchasing preferences [13].
- Eco-friendly packaging. This shows that the expected packaging is packaging made of environmentally friendly materials or does not have the potential to pollute the environment. Environmentally friendly packaging design can have an impact on sustainable supply chain management [14].
- The packaging is made of recyclable materials. Packaging should be made of materials that can be recycled with consideration to reduce environmental pollution waste.
- The packaging should contain complete information about the composition of the chocolate product to convince consumers about the nutritional content contained in the chocolate product.
- The packaging should contain information on product quality assurance such as quality standards from the Food and Drug Supervisory Agency and the existence of a halal guarantee label as well as product expiration information.
- The packaging is given a picture that contains the identity of the chocolate product combined with the image motif with the motif of local wisdom.

- The packaging is expected to be made with a clean, neat, elegant, and modern appearance because applying these attributes it can attract consumers to buy the product.

VI. CONCLUSION

Based on the results of data processing and discussion analysis, it can be concluded that in formulating the concept of packaging design for chocolate products produced by the SME-scale cocoa processing industry, it can be used with the Kansei Engineering approach through Kansei words which are determined based on consumer desires. In this study, it was determined that there were 15 Kansei words used to formulate 14 basic concepts for designing chocolate packaging. The basic concept of packaging design formulated in principle focuses on the main dimensions, namely graphic design aspects related to packaging colors and images, environmentally friendly packaging materials, packaging forms, information related to product composition, and quality contained in the packaging and packaging structure. This packaging concept, it can support variety, diversification, and innovation of related products with the packaging concept with a variety of colors, shapes, and packaging materials.

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