

HEDONIC TEST OF HERBAL SCRUBS PREPARATIONS, HOW MANY BRANDS ARE MARKETED IN BANDUNG CITY

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Abstract. The degree of liking or acceptance of a product by consumers can be determined through a hedonic test or like test, which can be used as a measurement tool and as a reference for manufacturers before the product is marketed in the market area. So, the aim of this research is how a researcher conducts a hedonic test on a product that was circulating in the market, where the test participants were previously unaware of the brand of the product and placed it in the same packaging, in order to avoid bias and impressions that are already associated with a particular brand, the samples of herbal scrubs tested were from six brands in the marketing area of Bandung city. In this research, the descriptive method was used, which was conducted observationally using a questionnaire as a test instrument, by having the panelists fill out the questionnaire by providing responses to the sample by providing sensory responses and providing ratings with a rating range ranging between 1 to 5, so that conclusions can be drawn about which sample received the highest score from the 20 panelists. The results of the six samples received by the panelists showed that sample No. 5 was the sample with the highest rating in terms of texture, color and smell as the three criteria given to the panelists.

Keywords: *Hedonic Test, Herbal Scrub, Questionnaire*

Introduction

Cosmetic preparations have experienced continuous growth in the last two decades both in terms of preparation variants and the development of modifications with various herbal ingredients. As the development of cosmetic preparations is becoming more

and more innovative, nowadays cosmetics are increasingly being developed from natural or herbal ingredients, both those that are truly purely natural ingredients without the addition of chemical ingredients, and herbal ingredients that combine the benefits of natural ingredients with chemical-based ingredients. Basic preparations or are combined with pharmaceutical preparations that can be used as cosmetic preparations both as decorative cosmetics and as skin care cosmetic preparations.

Cosmetic skin care preparations are in trend and are becoming more and more popular and available in larger quantities to meet consumer needs that are increasing from year to year. This is a great opportunity that is welcomed by herbal medicine and cosmetic manufacturers. This is also in line with public interest in the “Back to Nature” campaign.

One form of skin care preparations made from herbal ingredients that is in high demand by consumers is a body scrub which can be used on the entire body skin and has the expected benefit of making the skin clean, glowing and moisturized and will be classified as healthy skin which is the dream of consumers, especially female consumers, amidst a tropical climate like our country where the skin can become dull and dry and cannot be classified as healthy skin if it is not taken care of. Traditional cosmetic scrubs are believed to be able to remedy this problem.

Scrubs belong to the category of traditional cosmetic preparations, before they were industrialized today, long before they were widely consumed by women for centuries, especially on the islands of Java and Bali, where they were usually used by palace princesses and nobles. They contain many ingredients that can take good care of the skin, so it can be said that the properties of the ingredients used as body scrubs are empirical, since they have been used for centuries and passed down from generation to generation.

Nowadays there are many types of traditional scrubs that have been launched on the market with different brands and different benefits. The most common are the following types of scrubs:

1. Boreh body scrub

This body scrub originates from Bali and uses an ingredient called boreh, which is a mixture of different types of spices such as turmeric, ginger, nutmeg, cloves, cinnamon, galangal and so on. The spices are ground and mixed with rose water. Its application is usually accompanied by a massage that has a relaxing effect. Using these spices can also help detoxify and make the skin softer, brighter and more radiant.

2. Yellow Scrub

This scrub is yellow because it is mainly made of turmeric and other spices such as ginger and fragrant pandan as flavorings. These ingredients are ground and mixed

with rice flour essence and rose water. This yellow scrub usually has various benefits, namely that it can remove dead skin cells, leaving the skin cleaner, smoother and brighter. The aroma of turmeric and pandan also has a relaxing effect on the body, which is useful for relieving fatigue and stress.

3. Jicama Scrub

Jicama scrub is often used as a brightening body scrub that can help brighten the skin due to its vitamin C and various mineral content. Another benefit is that it removes dead skin cells, leaving the skin looking healthier, nourished, moisturized and brighter.

4. Papaya Body Scrub

Papaya scrub is used to get brighter and softer skin as papaya contains vitamins A and E which are beneficial for skin health.

5. Milk Body Scrub

A milk scrub containing lactic acid is used to brighten, moisturize and maintain the skin's youthfulness.

6. Coffee Scrub

Coffee scrub can be used as a natural exfoliator due to its soft grains to remove dead skin cells more effectively.

7. Glutinous Rice Body Scrub

Glutinous rice scrub is a useful antioxidant that can nourish the skin and give it a more youthful appearance.

8. Flower Scrub

Flower scrubs are made from different types of flowers, for example jasmine and roses, to make the skin softer, brighter and more fragrant.

9. Chocolate Scrub Chocolate scrub, which contains fat, is used to soften, moisturize and lighten the skin.

10. Tea Scrub The last type of body scrub is a tea body scrub. Due to the antioxidant content in tea, this treatment can have good benefits for the skin. You will get a skin that looks fresher and smoother.

This means that there are many foods for sale, so one can also use it as a herbal product, and one can also use it in the industrial field, and one can also consume it

separately to increase its stability. There is no need to add preservatives, as well as adding coloring or fragrances to increase the value of the preparation.

In this study, a boreh scrub preparation was selected for evaluation by the panelists based on the responses to all the samples provided. The sample selection of the Boreh preparation was done based on consumer interest in this type of product, which has been proven to be very popular due to the huge demand for this product, which is not only limited to the domestic market demand, but also the demand. That's right for the negroes.

Sensory testing (panel testing) plays an important role in product development by minimizing risk in decision making. Panelists can identify sensory characteristics that help describe the product. Sensory evaluation can be used to assess desirable or undesirable changes to a product or formulation ingredient, identify areas for development, determine if optimization has been achieved, evaluate competing products, observe changes that occur during processing or storage, and provide data necessary for product promotion. Acceptance and consumption preferences, as well as correlations between sensory and chemical or physical measurements, can also be obtained through sensory evaluation.

In addition to the responsible safety aspect, cosmetic care products are characterized by an appealing aesthetic appearance from the packaging to the dosage form itself, namely through the organoleptic or sensory assessment of color, structure and texture. In order for cosmetics to become competitive, market-accepted and high-selling products when sold as consumables, consumers of cosmetic care products decide whether the product is accepted by the consumer or not. For this reason, evaluations of how well a product is received by product users are important as a basis for decisions on the design of suitable formulations to ensure sufficient consumer acceptance.

Sensory assessment, also called organoleptic assessment or sensory evaluation, is one of the most primitive assessment methods. Sensory assessment became a field of science after the assessment procedures were standardized, rationalized, linked to an objective assessment, data analysis became more systematic and statistical methods were used in analysis and decision-making. Organoleptic evaluation is widely used for quality assessment in the food industry and other agricultural product industries. Sometimes this evaluation can provide very thorough evaluation results. In some cases, the judgment of the senses exceeds even the precision of the most sensitive tools.

Organoleptic evaluation, also called sensory evaluation or sensory assessment, is a long-known and still very common evaluation method. This evaluation method is widely used because it can be applied quickly and directly. In some cases, sensory evaluations have a higher accuracy than the most sensitive measuring instruments

(Meilgaard et al, 2016). The practical application of organoleptic evaluation is called organoleptic testing and is done using certain procedures. This test will provide data that will be further analyzed using statistical methods (Kartika, 1992).

Organoleptic testing is a method of measuring, judging or testing the quality of goods using the sensitivity of human sense organs, namely the eyes, nose, mouth and fingertips. Organoleptic testing, also called subjective measurements, is based on human subjective responses as a measuring tool (Soekarto, 1990). Organoleptic evaluation is very widely used for quality assessment in the food industry and other agricultural product industries. This assessment can sometimes provide very thorough assessment results. The assessment by the senses in some cases exceeds the accuracy of even the most sensitive instruments, including the hedonic (like) test. A like test is basically a test in which the test subjects answer whether they are satisfied or not with the properties of the material being tested.

Like tests are also called hedonic tests. Panelists were asked for their personal feedback on likes and dislikes. In addition, panelists also expressed their likes. This level of liking is called the hedonic scale. For example, in the sense of "like", it can have a hedonic scale such as: very, very similar, very similar, similar, quite similar. On the other hand, if the idea of "dislike" can have a hedonic scale such as "like" and something "similar", there is a reaction that is called neutral, that is, neither "like" nor "dislike".

The hedonic scale can be stretched or compressed depending on the desired scale range. The hedonic scale can also be converted into a numerical scale with quality ratings according to the level of preference. Statistical analyses can be carried out using these numerical data. The use of hedonic scales can be used in practice to determine differences. Therefore, hedonic tests are often used for the organoleptic assessment of raw materials or similar development products. Hedonic tests are often used to evaluate finished products.

So, in this research, the problem arises how to apply an example of a patient/consumer acceptance test called "Hedonic Test", since this test is an important aspect that cannot be ignored, especially in the manufacture of a consumer product, which in this case is a cosmetic care product.

Basic Theory

Methodology

This research was conducted using a descriptive observational study focused on Bandung city, where a questionnaire on organoleptic sensory responses to samples of several brands of Boreh body scrubs was administered to the panelists without allowing the panelists to see the packaging or the brand of the samples tested.

Tools and Materials

The equipment used in this study is a questionnaire as a research tool and also samples, the sample used in this research represents three price range categories, namely two samples with prices below 100,000.00 to represent relative prices, two samples with a price range between 100,000.00 Rp. which is the middle price and two samples with prices above 250,000.00 Rp. 250,000.00 represents a relatively expensive price, the sample was obtained from an online market or online store in Bandung city area. Researchers select samples that are most popular or purchased by consumers and can be browsed through reviews in the online store that offers the product.

Preparing Panelists

The researchers involved in this research were 20 panelists with the following intrinsic and extrinsic criteria:

- Intrinsic criteria: female, aged 20–50, able to communicate, willing to take hedonic tests and fill out questionnaires, and have sensory sensitivity to the five senses.
- Extrinsic criteria: have limitations in responding to sensory perceptions.

How to Present Samples

Hedonic test samples should be presented and coded randomly. When giving a rating, panelists are not allowed to repeat the rating or compare the examples presented. Therefore, an untrained rater should be presented with the samples one at a time so that the rater does not compare one sample with another.

How to evaluate

The hedonic test assessment must be done spontaneously. Then the panelists can fill out the questionnaire. In this case, the panelists first conducted an acceptance test for Boreh body scrub of six types of brands and the evaluation was done on five preference levels. Then proceed to the hedonic test.

Observation table

Names of panelists:

Sample type: Lip tint

Number of samples: 6

Test date:

Instructions: Test the samples from left to right, test and evaluate each sample thoroughly, then neutralize your vision and smell for 1 minute. Then continue with another sample until the 6th sample.

Hedonic/Likeability Test

Rate it using the following scale:

1 = Very dislike

2 = Dislike

3 = Normal/Neutral

4 = Like

5 = Very like

Sample Code for Evaluation Criteria

Odor Color Texture

Research Variables

The variable used is a single variable, namely the degree of preference for serum cosmetic preparations based on the texture, color and smell of Boreh peeling from 6 brands circulating in the online market in Bandung City.

Data Analysis Techniques

The data analysis used by the researchers is a descriptive quantitative data analysis based on a Likert scale where the highest score divided by the maximum score is calculated for each indicator.

Data analysis activities include:

1. Scoring

Scoring involves providing values in the form of numbers as answers to questions to obtain quantitative data. In this study, the ratings given are based on the level of responses received from respondents, namely:

A. I really like the score 5

B. I like item 4

C. The same as the score 3

D. I don't like score 2

e. I really don't like item 1

2. Tabulation

Tabulation is the process of ordering and grouping responses in a comprehensive manner, then calculating and adding them in tabular form.

Analysis of respondents' like measurements

Increase respondents' preferences by calculating the percentage of each question indicator (texture, color, and smell). Using Sugiyono formula, 2010.

$\% = (\text{number of points scored}) / (\text{maximum number of points}) \times 100\%$

$$\% = \frac{\text{Jumlah skor yang diperoleh}}{\text{Jumlah skor maksimum}} \times 100\%$$

Range of respondents' preference scale:

1. 81–100% Really like
2. Like 61–80%
3. Quite a lot 41–60%
4. 21–40% Dislike
5. 0–20% Dislike at all

Results and Discussion

Based on the results of the Boreh Scrub Hedonic Test, the following results were obtained:

1. Hedonic Test of the Texture of the Boreh Body Scrub Preparation

The hedonic test of the texture of the Boreh Scrub preparations was conducted through direct observations on the six preparations as test samples. A high level of liking represents the texture appearance that the panelists liked the most and can be observed in Table 1.

Table 1. Hedonic Test on the Texture of Boreh Body Scrub Preparation

Panelis	Sampel					
	1	2	3	4	5	6
P1	3	4	5	4	5	4

Panelis	Sampel					
	1	2	3	4	5	6
P2	2	4	3	3	4	5
P3	4	3	2	4	5	4
P4	5	2	2	4	4	4
P5	2	3	3	5	4	3
P6	3	2	2	2	5	3
P7	2	3	4	3	4	4
P8	4	5	4	5	5	4
P9	3	3	3	3	3	3
P10	2	2	3	2	3	2
P11	5	5	5	5	5	5
P12	3	4	4	3	3	2
P13	5	2	3	2	5	5
P14	3	3	4	3	3	3
P15	2	2	3	2	3	2
P16	4	3	4	5	5	5
P17	4	4	4	3	3	4
P18	3	3	3	4	4	4
P19	4	3	4	4	4	5
P20	3	2	3	3	4	4
Skor Total	66	62	68	69	81	75

Information :

P = Panelist

Liking Level 1 = Strong Dislike

Liking Level 2 = Dislike

Liking Level 3 = Moderate/Neutral

Liking Level 4 = Like

Liking Level 5 = Like Very Much

From panelists' responses to six samples of Boreh Body Scrub based on the texture of the preparation, it was found that Sample 5 received the highest total score compared to the other five samples, namely 80, which when converted into a liking level, according to Sugiyono, 2010, the sample is in the "very similar" category for 2nd and 3rd place. Samples 6 and 4 scored 75 and 69 respectively, meaning that both samples were in the "like" category.

2. Hedonic test of the color of the Boreh peeling preparation

The hedonic color test was carried out by direct observation of the six test sample preparations. A high level of liking represents the color representation most frequently chosen by the panelists, which can be seen in Table 2.

Table 2. Hedonic test of the Boreh peeling color

Panelis	Sampel					
	1	2	3	4	5	6
P1	4	3	4	3	5	4
P2	2	4	3	3	4	5
P3	4	3	2	4	5	4
P4	5	2	2	4	4	4
P5	2	3	3	5	4	3
P6	3	2	2	3	5	3
P7	2	3	4	3	4	4
P8	4	5	4	5	5	4
P9	3	3	3	3	3	3
P10	2	2	3	2	3	2
P11	5	5	5	5	5	5
P12	3	4	4	3	5	5
P13	5	2	3	2	5	5
P14	3	5	4	3	3	3
P15	2	2	3	2	3	2
P16	4	3	4	5	5	5
P17	4	4	4	3	3	4
P18	3	3	3	5	5	4
P19	4	3	4	4	4	5
P20	3	2	3	5	5	3
Skor Total	67	63	67	72	85	77

Information :

P = Panelist

Likeness level 1 = Strong dislike

Likeness level 2 = Dislike

Likeness level 3 = Moderate/Neutral

Likeness level 4 = Like

Likeness level 5 = Like very much

Based on the panelists' responses to six scrub samples based on the color of the preparation, it was found that sample 5 received the highest total score compared to the other five samples, namely 85, which, according to Sugiyono, 2010, is in the "very

similar" category, while the other samples, namely samples 1, 2, 3, 4, and 6, are each in the "like" category.

3. Hedonic test of the smell of Boreh body scrub preparation

The hedonic test or smell evaluation of preparations is done by directly observing the six preparations as test samples. A high level of liking represents the odor presentation that the test participants liked the most, which can be seen in Table 3.

Table 3. Hedonic odor test of Boreh body scrub preparations

Panelis	Sampel					
	1	2	3	4	5	6
P1	5	4	5	4	5	5
P2	2	4	3	3	4	5
P3	4	3	2	4	5	4
P4	5	2	2	4	4	4
P5	2	3	3	5	4	3
P6	3	2	2	3	5	3
P7	2	3	4	3	4	4
P8	4	5	4	5	5	4
P9	3	3	3	3	3	3
P10	2	2	3	2	3	2
P11	5	5	5	5	5	5
P12	3	4	4	3	5	5
P13	5	2	3	2	5	5
P14	3	5	4	3	3	3
P15	2	2	3	2	3	2
P16	4	3	4	5	5	5
P17	4	4	4	3	3	4
P18	2	2	2	4	4	3
P19	4	3	4	4	4	5
P20	3	2	3	5	3	3
Skor Total	67	63	67	72	82	77

Information:

P = Panelist

Like Level 1 = Similar Dislike

Like Level 2 = Dislike

Like Level 3 = Moderate/Neutral

Like Level 4 = Like

Like Level 5 = Like Very Much

From the panelists' responses to the six samples of Boreh Body Scrub based on the aroma of the preparation, it was found that sample 5 had the highest total score compared to the other five samples, namely 82, which when converted into the degree of like, fell into the "very similar" category according to Sugiyono, 2010, while the other samples fell into the "like" category.

4. Summary of Hedonic Tests for Each Test Component

The results of each sample on these three criteria are presented in tabular and graph form in the table below:

Table 4. Summary of Hedonic Test

PARAMETER	SKOR TOTAL					
	SAMPEL 1	SAMPEL 2	SAMPEL 3	SAMPEL 4	SAMPEL 5	SAMPEL 6
TEKSTUR	66	62	68	69	81	75
WARNA	67	63	67	72	85	77
BAU	67	63	67	72	82	77
SKOR TOTAL	200	188	202	213	248	229

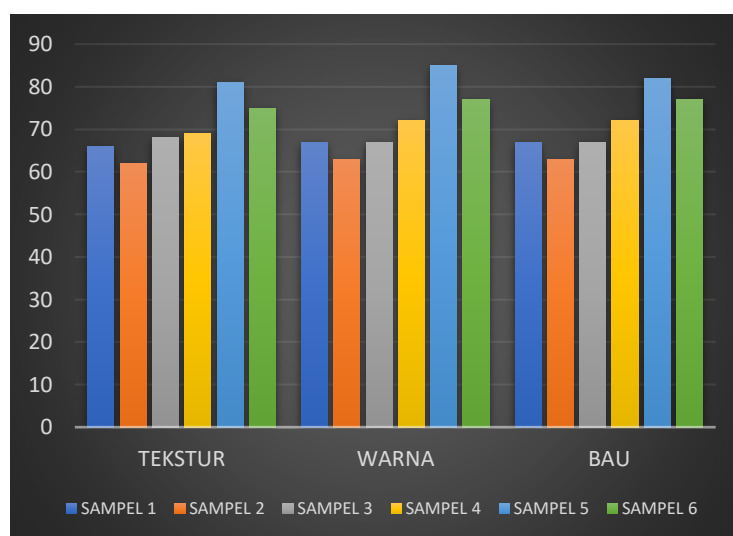


Figure 1. Hedonic Test Recapitulation Diagram

Conclusion

Based on the results of data analysis from hedonic tests of 6 brands of Boreh body scrub preparations as test samples, the following conclusions can be drawn:

1. Sample 5 is the sample that received the most ratings from the test participants as Boreh body scrub preparation according to various test criteria, both in terms of texture, color and smell.

2. The score obtained by sample 5 is in the "like" category, while the other five samples are in the "dislike" category.

SUGGESTTION

Budiasih, S., Masyitah, I., Jiyauddin, K., Kaleemullah, M., Samer, A. D., Fadli, A.

M., & Yusuf, E., 2019, Formulasi dan Karakterisasi Serum Kosmetik yang Mengandung Minyak Argan sebagai Agen Moissurizing. *Bromo*, 297–304.

Carlotta M, Maria C, Luisa DM, Federica R, Chiara DM, Franco A, Pietro M

dan Tommasina C., 2011. Sistem hidrogel baru yang dimuat kendaraan yang cocok untuk aplikasi topikal: Persiapan dan Karakterisasi, *Jurnal Pharm Pharmace Sci.*, 14(3): 336-346.

Fisher GJ, Kang S, Varani J, Bata-Csorgo Z, Wan Y, Datta S, Voorhees JJ.,

2002. Mekanisme photoaging dan penuaan kulit kronologis. *Lengkgungan Dermatol.* 138(11):1462-70.

Kartika, B.,1992, *Petunjuk Evaluasi Sensori Hasil Industri Produk Pangan.*

Yogyakarta.

Kotler. 2005. Teori kepuasan dan faktor-faktor yang mempengaruhi

kepuasan, Jakarta

Walikota, F. A., Kenner, J. R., & Draelos, Z. D. 2014. Piramida kesehatan dan

kecantikan kulit: panduan berbasis klinis untuk memilih produk perawatan kulit topikal. *Jurnal Obat-obatan dalam Dermatologi: JDD*, 13(4), 414–421.

Moravkova, T., dan Filip, P., 2014, Pengaruh Pengental pada Sifat Geologi

dan Sensorik Lotion Kosmetik, *Acta Polytechnica Hungarica*, Vol 11(6) : 173-186.

Meilgaard, MC, Civille, GV, Carr, TB, 2016. Teknik Evaluasi Sensorik, Edisi

ke-5, CRC Press.

Nursalam. 2001. Pengertian Kepuasan, Yogyakarta

Sahu, G., Sahu, s., Sharma, H., dan Jha, AK, 2014, Tinjauan Tren Saat Ini

dan Baru untuk Formulasi Anti-Penuaan, *IJPCBS*, 4(1), 118-125.

Schreml, S., Kemper, M., dan Abels, ., 2014. pH Kulit pada Lansia dan

Perawatan Kulit yang Sesuai. *Jurnal Medis Eropa*. 86-94.

Sugiyono. 2010. Metodologi Penelitian Kesehatan. Mitra Cendakia.

Yogyakarta

Surini, S., Mubarak, H., & Ramadan, D. (2018). Serum kosmetik yang mengandung

anggur (*Vitis vinifera* L.) fitosom ekstrak biji: Formulasi dan studi penetrasi in vitro. *Jurnal Apoteker Muda*, 10(2), s51–s55.

Thakre, A. D. (2017). Formulasi dan pengembangan serum de pigmen

yang menggabungkan ekstrak buah-buahan. *Jurnal Internasional Sains Inovatif dan Teknologi Riset*, 2(12), 330–382.

Tranggono, R.I., Latifah, F., Jayadisastra, J., 2007, Buku Pegangan Ilmu

Pengetahuan Kosmetik. Gramedia Pustaka Utama, Jakarta.s

Undang-undang Republik Indonesia No.36 Tahun 2009 tentang kesehatan

Indonesia. Jakarta

Umar. 2003. Dasar Pertimbangan Kepuasan Pasien. Jakarta