Marketing Research Of *Marsilea crenata C.* Presl. Leaves Powder Drink Products Using Organoleptic Test And SWOT Analysis

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ABSTRACT

Background: Marketing research is needed for a new product before the commercialization stage. For instance, an herbal powder drink product with neuroprotective properties was extracted from *Marsilea crenata C. Presl* leaves. This research aims to find out the hedonic assessment and hedonic quality of products between orange flavor (A) and apple flavor (B), then to obtain a good marketing strategy through the SWOT analysis method. Methods: The quantitative descriptive observation using the purposive sampling technique was used by involving 100 people (aged 25 years and over) living in Malang City. The results of the hedonic test using Wilcoxon showed A variation with a mean value ranging from 2.58 to 3.14 and B variation in the range of 3.02 to 3.39. In the hedonic quality test of these two variations, it had an almost similar quality. Results: The results of the SWOT analysis obtained an IFAS value of 0.610 and an EFAS value of 0.503. From these results, quadrant I obtained, which supports aggressive marketing strategy policies. From the results of the organoleptic test assessment, it can be proven that both product variations are acceptable to the panelists. The marketing strategy of *Marsilea crenata C. Presl* leaves extract powder is categorized in quadrant I, which means a condition that supports aggressive growth policies. Conclusion: From the results of the organoleptic test assessment, it can be proven that both product variations are acceptable to the panelists. The marketing strategy of *M. crenata* leaves extract powder is categorized in quadrant I, which means a condition that supports aggressive growth policies.

KEYWORDS

Marketing research, Organoleptic test, SWOT analysis, Instan drink, M. crenata leaves

1. Introduction

Research hilirization products need to pay attention to suitability with the characteristics of Indonesian society, one of which is fulfilling halal aspects. One potential source to be developed into halal pharmaceutical products as a form of hilirization research results is *Marsilea crenata C. Presl* leaves[1]. The presence of phytoestrogens in M. crenata leaves has been proven in a series of previous studies, including metabolite profiling tests and in silico neuroprotective activity tests, which prove the presence of large amounts of phytoestrogens in M. crenata leaves, which have the potential to slow the development of neurodegenerative diseases through ER-dependent [2][3][4]. Furthermore, in the cytotoxicity test on HMC3 microglia cells, the results showed that the 96% ethanol extract of M. crenata leaves was proven to be safe and non-cytotoxic [3]. Research on neuroinflammatory effects in vitro shows that administration of M. crenata leaves extracts and fractions can inhibit MHC II expression and increase the expression of activated Arg1 and ERβ in HMC 3 microglial cells at the best dose of 250 ppm [3] [4]. Research data also shows that kaempferol is an active marker found in M. crenata leaves. In vivo testing on zebrafish was also carried out, with results showing that the administration of a 96% ethanol extract of M. crenata leaves could stimulate zebrafish locomotor activity in a relevant manner [5].

The former of M. crenata leaves research has produced an instant herbal powder product with a high phytoestrogen content[6]. Women who have entered menopause often complain of several symptoms, including fatigue, joint pain, and impaired cognitive function caused by estrogen deficiency [7]. Estrogen is the primary hormone in women and plays an important role in inflammatory processes, especially neuroinflammation[8]. The phytoestrogen in this powdered drink has anti-inflammatory neuroprotective effects [5].

Along with the development of technology and increasing competition, a company is required to be more creative in developing marketing strategies and appropriate products so that they can be accepted by consumers and increase buying interest[9][10]. One of the tests that can be performed to determine whether a product or characteristic of a product is acceptable to the public is through organoleptic testing [11]. In this research, a preference test consists of a hedonic test and a hedonic quality test. The hedonic test is a sensory assessment by respondents of organoleptic properties carried out to calculate the magnitude of their liking of a product using a hedonic scale. The scale used in hedonic quality tests varies depending on each organoleptic property as fine and rough for texture assessment. In addition, to know the needs and desires of consumers, it is necessary to have the right marketing strategy so that a business entity gets a target market and optimum profit. SWOT analysis is a marketing strategy analysis aimed at identifying market situations and conditions through four aspects, namely strengths, weaknesses, opportunities, and threats. This analysis is part of the planning process [12].

2. Materials and Methods

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2.1 Materials

The product used in the organoleptic test and SWOT analysis was a *M. Crenata* extract powder drink (MCEPD) with 2 variations of orange (A) and apple (B) flavours for maintaining body immunity. This product is produced by PT. Agaricus Sido Makmur Sentosa Malang, East Java. Product descriptions can be seen in Table 1 below.

Table 1: Herbal powder preparation formula from *M. crenata* leaves

Name	***Function***	***%***	***Quantity***
M. crenata leaves extract	Active substances	40%	800mg
Tween 80	Foaming agent	6%	120mg
Maltodextrin	Filler and binding agent	10%	200mg
Sucralose	Sweeteners	44%	880mg
Essence (orange/ apple)	Aromas and flavours	q.s	q.s
	Total		2000mg

2.2 Method

Organoleptic Test, Study site, Population and Design

This research was conducted in Malang City, Indonesia, among people > 25 years old. This research used a questionnaire regarding the level of people's liking for MCEPD products to obtain data on the sample. This has been carried out between July and November 2023.

Selection criteria, sample size determination, and sampling technique

The population of this study was Malang city residents (> 25 years old) with ordinary senses (hearing, vision, smell, touch, and taste). The research sample calculation used the Slovin formula and obtained a sample size of 100 people. Participation in this research questionnaire is voluntary, and respondents will be asked to fill out informed concerns. Names and other identities will not be included in data collection. The sampling technique used in this research is a non-probability sampling technique using a purposive sampling method.

Data collection technique and data analysis

Data was collected by distributing questionnaires to respondents who fit with the criteria after they tried samples of M. crenata extract powder drink (MCEPD) products. The questionnaire had been tested for validity and reliability tests. The hedonic test data and hedonic quality of MCEPD collected were analyzed using SPSS software version 20. Hedonic data variables for A and B products were analyzed using the Wilcoxon test to see whether there are differences in the level of preference consisting of texture, taste, color, smell, flavor, and solubility of halal herbal powder drinks.

The hedonic instrument used has been tested for validity and reliability. Then, the testing of the hypothesis was carried out using the paired T-test. However, because the data was not normally distributed, further testing was carried out using the two-sample Wilcoxon test. The Wilcoxon test results show that the MCEPD between A and B variations has an asymptote value. The significance is 0.00 (sig<0.05), so it is stated that there is a significant difference in the level of liking between the A and B variations. Next, a descriptive statistical test was carried out on each product's organoleptic properties to determine the average level of panelists's liking for the product. In the descriptive statistical test, the average value, minimum value, maximum value, and data distribution of the panelists' favorite levels will be known.

2.3 SWOT Analysis

Study site, population, and design

This research was conducted in Malang City on people > 25 years old. The questionnaire used in this research was intended to determine the strengths, weaknesses, opportunities, and threats of MCEPD products. This has been done between July and November 2023.

Selection criteria and sample size determination

The population in the SWOT analysis is divided into two, namely the IFAS population and the EFAS population. The IFAS population contains all people involved in product manufacturing, with a total of 33 people. The EFAS population is all people of Malang City who are < 25 years old with five senses that function well. The sample calculation for the IFAS population uses total sampling, while the EFAS population uses the Slovin formula, and a sample of 100 people is obtained.

Sampling technique

The sampling technique used in the IFAS questionnaire is total sampling, and in the EFAS questionnaire, it is a non-probability sampling technique using the purposive sampling method. The techniques used in the two questionnaires are different because the respondents who fill out the IFAS and EFAS questionnaires are not the same.

Data collection technique and data analysis

Data collection was carried out by distributing questionnaires to respondents according to the type of questionnaire. The questionnaires used by both IFAS and EFAS have been tested for validity and reliability. Data obtained from the IFAS and EFAS questionnaires were analyzed by calculating the total score for each parameter (strength, weakness, opportunity, threat). Next, a Cartesius diagram is created with the x-axis containing the strength score minus the weakness score and the y-axis containing the opportunity score minus the threat score to determine whether a company or product belongs to quadrants I, II, III, or IV. From this analysis, policy recommendations can be obtained that a company can take based on strengths, weaknesses, opportunities, and threats.

3. Results

In the research, untrained panelists and moderately trained panelists were used moderately trained panelists were 20 respondents who had a habit of consuming herbal medicine once a week or more and who passed the selection of the health of the five senses. This group was allowed to fill in the hedonic test form and hedonic quality. The other 80 were untrained panelists consisting of ordinary people without special selection and were only allowed to fill in the hedonic test form.

3.1 Hedonic Test

Table 2: Hedonic Descriptive Statistics Test for MCEPD

Items	*N*	*Minimum*	*Maximum*	*Mean*	*SD*
Texture A	100	2	4	3.14	0.569
Texture B	100	2	4	3.39	0.584
Taste A	100	2	4	2.71	0.608
Taste B	100	2	4	3.36	0.612
Flavour A	100	1	4	2.73	0.548
Flavour B	100	2	4	3.28	0.604
Aroma A	100	1	4	2.58	0.727
Aroma B	100	1	4	3.02	0.710
Color A	100	1	4	3.06	0.600
Color B	100	1	4	3.31	0.692
Solubility A	100	1	4	3.04	0.650
Solubility B	100	1	4	3.21	0.715

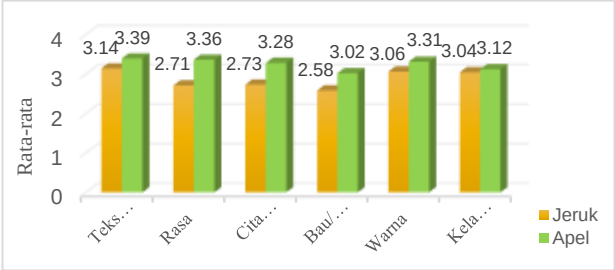

Figure 1: Average Level of Panellists Likeness for Product

3.2 Hedonic Quality Test

Instruments of hedonic quality tests have been tested for validity and reliability. Meanwhile, testing the hypothesis was carried out using the paired T-test. However, because the data was not normally distributed, further testing was carried out using the Wilcoxon two-related samples test. The Wilcoxon test results show that MCEPD between A and B variations has an asymptote value. The significance of the taste parameter is less than 0.05, so it is stated that there is a significant difference in taste quality between the A and B variations. Meanwhile, other parameters have an asymptote value. The significance is more than 0.05, so it is stated that there is no significant difference in the quality of texture, smell, taste, color, and solubility between variations of orange and apple.

Table 3: Descriptive Statistics Test of the Hedonic Quality of Powdered Drinks from *M. crenata* Leaves

Items	**N**	**Minimum**	**Maximum**	**Mean**	**SD**
Texture A	20	3	4	3.95	0.224
Texture B	20	3	4	3.95	0.224
Taste A	20	2	4	2.35	0.587
Taste B	20	2	4	2.90	0.718
Flavor A	20	2	4	2.95	0.887
Flavor B	20	2	4	2.85	0.875
Solubility A	20	2	4	2.65	0.671
Solubility B	20	2	4	2.70	0.657
Color A	20	2	4	3.55	0.686
Color B	20	2	4	3.40	0.754
Smell A	20	2	4	3.25	0.851
Smell B	20	2	4	3.20	0.834

3.3 SWOT Analysis

In the research, 100 respondents were used for the EFAS test and organoleptic tests. In the IFAS test, 33 different respondents were used from people involved in research and production of MCEPD products.

The SWOT analysis form instruments, both IFAS and EFAS, have been tested for validity and reliability. Before determining the indicators in the IFAS and EFAS tables, an interview was conducted with the Head of Marketing in the Industry where the product was produced to obtain information regarding the strengths, weaknesses, opportunities, and threats to the product.

This information will later become a reference in determining indicators from IFAS and EFAS. The IFAS and EFAS indicators are weighted for each indicator based on the level of significance to determine the size of the indicator's influence on marketing strategy. A rating is given by the respondent with a Likert scale of one (disagree) to four (agree). The weight and rating values will be used to obtain a score value by multiplying the weight by the rating. The results of this multiplication will be used to obtain the location of the coordinates on the Cartesian SWOT diagram so that we can determine the position of the quadrants in the marketing strategy for the MCEPD.

Table 4: IFAS Calculations

No	*Indicator*	*Weight*	*Rating*	*Score (W x R)*
	Strength			
1.	MCEPD is accepted by the public than Simplisia products	0.121	3.545	0.429
2.	Powdered drinks last longer than simplicia preparations	0.121	3.455	0.418
3.	The efficacy of the prototype product has been tested preclinically	0.121	3.545	0.429
4.	The factory is already at the IOT (Traditional Medicine Industry) stage and is ISO (International Organization of Standardization) certified by SAI Global	0.091	3.515	0.320
5.	The preparations are processed using good, hygienic, and halal methods with the guidelines of the MUI Halal Guarantee System (SJH)	0.121	3.515	0.425
	Sub Total	**0.553**	**18.575**	**2.021**
	Weakness			
1.	MCEPD is still unknown by society	0.091	3.152	0.287
2.	There is still no supply of raw materials with standardized quality	0.061	2.879	0.176
3.	There are still a few variations in taste in the product preparation	0.061	2.909	0.177
4.	The flavoring in MCEPD is not strong enough	0.091	2.727	0.248
5.	MCEPD production requires huge capital	0.121	3.091	0.374
	Sub Total	**0.447**	**14.758**	**1.262**
	Total	**1**	**33.333**	**3.283**

Based on the table above, it can be seen that the subtotal strength is 2.021 and the weakness is 1.262. From these values, the strength factor of the MCEPD is greater than the weakness factor

Table 5: EFAS Calculations

No.	*Indicator*	*Weight*	*Rating*	*(W x R)*
	Opportunity			
1.	People can use the product as an alternative to maintaining estrogen hormone levels in the body	0.097	3.250	0.315
2.	Indonesian people prefer herbal products for health maintenance	0.097	3.170	0.307
3.	People trust research-based products more than empirical-based products/ancestral beliefs	0.097	3.240	0.314
4.	People can buy products through online stores	0.129	3.270	0.422
5.	Indonesian people prefer products that are halal-certified	0.097	3.530	0.342
	Sub Total	**0.516**	**16.46**	**1.701**
	Threat			
1.	People don't like the taste of MCEPD	0.064	2.230	0.143
2.	People have little confidence in the product	0.129	1.760	0.227
3.	People prefer to choose similar products with lots of testimonials	0.129	2.300	0.297
4.	People prefer well-known products	0.097	2.730	0.265
5.	People prefer imported products over local products	0.064	2.710	0.173
	Sub Total	**0.484**	**11.73**	**1.105**
	Total	**1**	**28.19**	**2.806**

Based on the table above, the score for opportunity is 1.701 and the score for threat is 1.105. This shows that the product's opportunity factor is greater than the product's threat factor.

After obtaining the score value for each parameter, calculations are carried out to obtain the coordinate points on the Cartesian SWOT diagram. The formula used in this calculation is described as follows.

X-axis = IFAS = strength score – weakness score

Y axis = EFAS = opportunity score – threat score

Where the results are obtained:

X-axis = 2.021 – 1.262

X-axis = 0.759

Y-axis = 1.701 – 1.105

Y-axis = 0.596

From the results of these calculations, a Cartesian SWOT diagram is created as follows.

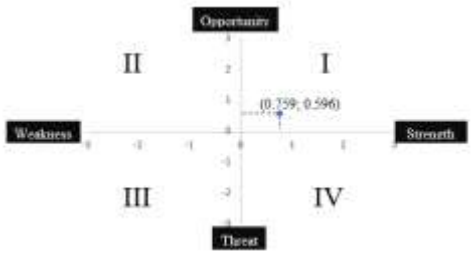

Figure 2: SWOT Cartesius Diagram

Based on Figure 2, it is found that the situation and conditions of the marketing strategy for MCEPD are located in quadrant I. Quadrant I is a condition when the strengths of a product are higher than the weaknesses and the opportunities of the product are higher than the threats. This quadrant is a quadrant that supports aggressive growth policies (growth) by maximizing strengths and opportunities so that the organization will continue to progress and gain greater profits[9].

4. Discussion

4.1 Hedonik Test

Based on the results of the analysis of the level of hedonic test in Table 2, it can be seen that the texture of MCEPD in the A variation has an average of 3.14, which means that most of the panelists liked it as much as 66% chose the like category. Meanwhile, the texture of B variation has an average of 3.39, which means that most of the panelists like it very much, with 51% choosing the like category and 44% choosing the very like category. The powder texture of both variations has the same quality, namely smooth, but the orange variation has smaller particles than the apple variation[13]. MCEPD also has similarities with the characteristics of the ginger rhizome instant drink powder that panelists liked in research conducted by Anastasia [14], namely that the texture is dry, smooth, and does not clump. This is relevant with the

theory of Sucipto Suharso (1998), which states that a good instant powder texture quality is that it is not lumpy and dry; there is a crunching sound when the product is shaken in the package [15].

The taste of MCEPD in A variation has an average of 2.71, which means like it, with most of the panelists with a presentation of 55% choosing the like category and 37% choosing the dislike category. Meanwhile, assessing the taste of B variation has an average of 3.36, which means very like it, with the majority of panelists, 50%, choosing the like category and 43% choosing the very like category. The addition of apple essence is thought to give a sweeter impression to the product's apple variation compared to the orange variation, which uses orange essence. When related to the assessment of the hedonic quality test by somewhat trained panelists, the B variation product has a sweetness range of'somewhat sweet' while the A variation has a sweetness range of 'less sweet'. This means that panelists prefer herbal drinks with a slightly sweet taste compared to less sweet ones. This is in line with research on the preference of young coconut water probiotic drinks conducted by Yanuar [16], namely that the panelists' liking level increased along with the increase in the sweetness of the product.

The flavor of MCEPD in A variation has an average of 2.73, which means like it, with most of the panelists with a presentation of 66% choosing the like category. Meanwhile, the flavor assessment of the B variation had an average of 3.28, which means they really like it, with most of the panelists with a presentation of 56% choosing the like category and 36% choosing the really like category. This means that panelists prefer products with the addition of apple essence. It is thought that the addition of apple essence to the product apple variation can cover up the unpleasant taste of M. crenata leaves. Taste is the response caused by the unity of the smell and taste of food when consumed. If the smell is liked, the taste will usually be liked too. It can be seen that the percentage of products most liked by panelists is in line with smell and taste [17].

The smell/aroma of MCEPD in the orange variation has an average of 2.58, which means like it, with the majority of panelists with a presentation of 48% choosing the like category and 38% choosing the dislike category. In assessing the smell/aroma of the apple variation, the average was 3.02, which means they like it, with the majority of panelists, 58%, choosing the like category and 25% choosing the really like category. Each plant has a unique aroma, and the addition of certain ingredients during processing can affect the aroma. Like the aroma of MCEPD, it has a distinctive aroma, which is typical of clover plants that live in water. Therefore, the addition of orange and apple flavors, apart from improving the taste, also improves the smell of the product [15]. The more M. crenata leaves extract is added, the sharper the smell it produces. Likewise, the more flavors added, the more volatile compounds from the flavors will help cover up the unpleasant aroma of M. crenata leaves extract.

The color of MCEPD in A variation has an average of 3.06, which means like it, with the majority of panelists, 67%, choosing the like category. In assessing the color of the B variation, the average was 3.31, which means they really like it, with most of the panelists, 46%, choosing the like category and 43% choosing the really like category. If we look at the results of the hedonic quality test of MCEPD, the A variation produces a pale green color and the B variation produces a greenish yellow color, with both variations not being thick or clear. The panelists preferred the color appearance of the B variation with a greenish-yellow color, which looks more refreshing than the pale green color of the A variation. According to research conducted by Pranadewi [18], the panelists' highest level of liking was for the color of the drink, which looked refreshing and bright. Color has a big impact on product acceptance because it will be visually seen by panelists and becomes the first impression to decide whether or not they are interested in a product. The good color quality of instant powder drinks, according to Sucipto Surahso (1998), is that the color is in harmony and similar to the raw material used, namely from plants [15] [19].

The solubility of MCEPD in the A variation has an average of 3.04, which means like it, with the majority of panelists, 61%, choosing the like category. In assessing the solubility of drinks, A variation had an average of 3.21, which means that most of the panelists liked it; 48% chose the like category, and 37% chose the really like category. Solubility assessment includes the shape, color, and clarity of the solution. Both variations have the same solubility, that is, they dissolve easily; however, because A variation has simplicia powder with smaller particles, it tends to form precipitates that are difficult to redistribute [20] [21].

4.2 Hedonic Quality Test

Based on the results of the hedonic quality analysis in Table 3, it can be seen that the powder texture of MCEPD in A and B variations has the same average, namely 3.95 which means smooth.

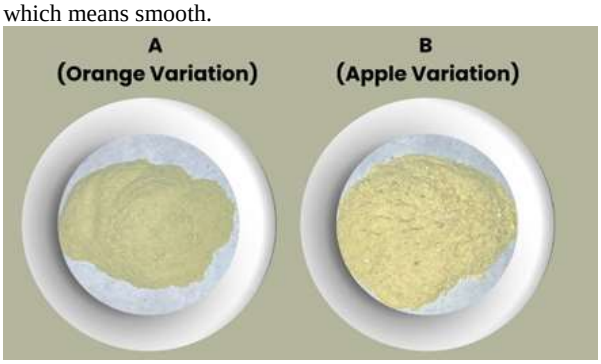

Figure 3: Texture of MCEPD

The taste of the product in the A variation has an average of 2.35, which means it is less sweet. As many as 70% of panelists stated that the taste of A variation product was not sweet enough, and 25% said it was slightly sweet. Meanwhile, the B variation has a mean of 2.95, which means it is slightly sweet. It can be concluded that the B variation has a sweeter solution taste than the A variation. This is thought to be because the addition of apple essence gives a sweeter taste than orange essence. The amount of sucralose in each sachet is the same, namely 880 mg. The amount of sucralose sweetener has also been adjusted to the acceptable daily intake (ADI) of this ingredient, where the maximum amount that can be formulated in drinks, whether in the form of liquid or solid (powder), is 1250 mg.

The flavor of the product in A and B variations has averages that are not much different, namely 2.95 and 2.85, which means it has a slightly herbal taste. The typical herbal taste in question is the taste produced from M. crenata leaves, which have characteristics like plants that live in water. The product does not have the typical taste of M. crenata leaves due to the addition of orange and apple flavorings. The smell/aroma of orange and apple variations have an average of 3.25 and 3.20, which means the smell/aroma of this beverage product is rather strong, typical of herbs. The best brewing temperature for herbal beverage products is from 60 oC to 80 oC; in cold temperatures, the volatile compounds from the addition of

inactive flavors evaporate so that what the nose smells is the distinctive, unpleasant smell of M. crenata leaves [22].

The color of the product in the A and B variations has an average of 3.55 and 3.40, which means it is not thick or clear. Both variations have similar colors, namely not thick, but solution A variation produces a greenish color and solution B variation produces a yellowish color. Meanwhile, the solubility of A and B variations has an average of 2.65 and 2.70, which means the solubility is easy to dissolve. In herbal medicine products, including MCEPD, if left to sit after dissolving in water, a precipitate will form. This is natural because the ingredients used are not fresh leaves, namely from leaves that are already in simplicia form [23]. This precipitate is also easy to redissolve through light stirring.

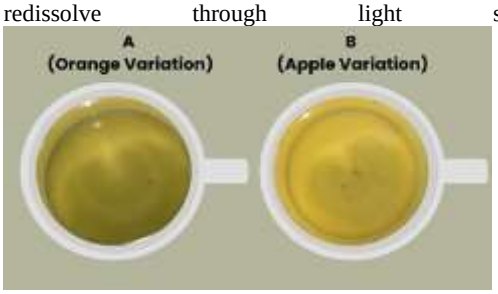

Figure 4: The Color of Brewing MCEPD

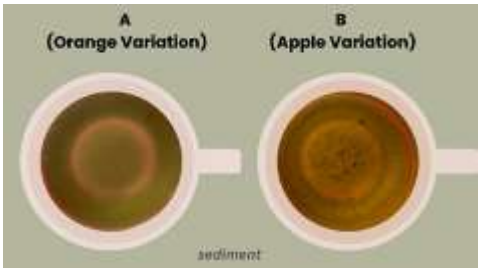

Figure 5: Brew MCEPD

4.3 SWOT Analysis

SWOT matrix analysis of MCEPD was used to create marketing strategy planning. This matrix clearly describes opportunities and threats in external factors that can be faced with strengths and weaknesses in external factors. The strategy in quadrant I is a strategy that focuses on maximizing existing strengths to create a strong competitive advantage [24]. In addition, an aggressive marketing strategy allows companies to exploit opportunities so that weaknesses can be covered and threats can be minimized. This matrix produces four alternative marketing strategies that can be used in MCEPD marketing.

Table 6: SWOT Matrix of MCEPD

Internal / **External**	***Strength***	***Weakness***
	1. MCEPD is accepted by the public than Simplisia products 2. Powdered drinks last longer than product has been tested preclinically 4. The factory is already at the IOT (Traditional Medicine Industry) stage and is ISO (International Organization of Standardization) certified by SAI Global 5. The preparations is processed using good, hygienic, and halal methods with the guidelines of the MUI Halal Guarantee System (SJH)	1. MCEPD is still unknown by society 2. There is still no supply of raw terials with standardized quality 3. There are still a few variations in taste in the prototype preparation 4. The flavoring in MCEPD is not strong enough 5. MCEPD production requires huge capital
Opportunities 1. People can use the product as an alternative to maintaining estrogen hormone levels in the body 2. Indonesian people prefer herbal products for health maintenance 3. People trust research-based products more than empirical-based products/ancestral beliefs 4. People can buy products through online stores 5. Indonesian people prefer products that are halal-certified	**S-O Strategy** 1. Participate in expo activities to introduce products and the benefits of clover leaves extract powder drinks (S1, S3, O2) 2. Ask consumers for testimonials regarding the efficacy and advantages of MCEPD to attract other potential buyers (S2, S3, O1, O2, O3) 3. Using social media and online stores as a means of sales and promotion (S1, S2, O4) 4. Emphasize to the public that MCEPD is a halal preparation produced by the industry with a halal guarantee system. (S5, O5)	**W-O Strategy** 1. Carry out product promotions either by participating in exhibition activities or via social media platforms (W1, O1, O2, O3, O5) 2. Add raw material partners to match consumer demand for products (W2, W5, O4) 3. Improve flavorings and flavor variants in preparations so that they can be accepted by consumers (W3, W4, O2)
Threat 1. People don't like the taste of MCEPD 2. People have little confidence in the product 3. People prefer to choose similar products with lots of testimonials 4. People prefer well-known products 5. People prefer imported products over local products	**S-T Strategy** 1. Carry out MCEPD promotions either by participating in exhibition activities or via social media platforms (W1, O1, O2, O3, O5) 2. Add raw material partners to match consumer demand for MCEPD (W2, W5, O4) 3. Improve flavorings and flavor variants in preparations so that they can be accepted by consumers (W3, W4, O2)	**W-T Strategy** 1. Promote MCEPD in strategic areas and on social media to expand the reach of marketing targets (W1, T3, T4, T5) 2. Modify the formula by improving the taste of the preparation so that it can be more accepted by the public (W4, T1)

5. Ethical Considerations

Ethical approval to conduct this study was obtained from the Faculty of Health Sciences, Brawijaya University Health Research Ethics Committee with the approval number 5865/UN10.F17.10.4/TU/2023.

6. Conclusion

Based on the results, the hedonic test showed that the panelists liked the MCEPD, as shown from the results of the average score by the panelists stating that they really liked both product variations. The quality of the MCEPD is that the texture of the powder is smooth, the taste of the A variation is less sweet, the taste of the B variation is slightly sweet, it has a slightly herbal flavor, the aroma has a slightly herbal taste, the color is not dark/clear, and the solubility is easy to dissolve. Based on the SWOT analysis that has been carried out, the IFAS value is 0.610 and the EFAS value is 0.503. From these values, the marketing strategy for MCEPD is categorized in quadrant I, which means conditions where strengths are greater than weaknesses and opportunities are greater than threats. Quadrant I is a condition that supports aggressive growth policies.

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