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Perception and Interpretation Analysis Among Consumers Toward Instant Herbal Products

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Abstract.
Traditional medicine is an alternative that the community can use to maintain body immunity. Plants that can be consumed as immune boosters include ginger and turmeric. Several phytochemical compounds known to have physiological functions are carotenoids, phytosterols, saponins, glycosinolates, polyphenols, protease inhibitors, monoterpenes, phytoestrogens, sulfides, and phytic acid. The abundant availability of biopharmaceutical plants has been utilized by small and medium enterprises (SMEs) in Semarang to be processed into various postharvest processed products in the form of instant powder drinks, as was provided by AIG Bunda Nisa SMEs in Delik Village, Tuntang District. This study aimed to determine consumer perceptions and interpretations of instant herbal products. The research locus is located in the city and regency of Semarang and its surrounding areas. Primary data were obtained through interviews and questionnaires, while secondary data were obtained through literatures related to the research. The product used as the object of study is the product of AIG Bunda Nisa's instant herbal medicine. The attributes that will be assessed by consumers include price, taste, benefits, texture, packaging, legality, and ease of obtaining. The results showed that the types of instant herbal medicine that were often consumed by respondents were ginger 30%, Curcuma (Curcuma Xanthorrhiza Roxb) 26%, and turmeric (Curcuma Domestica Vahl) 21%. The motivation of 68.1% of respondents to consume instant herbal medicine is for health, while taste and quality being the primary considerations. In this matter, the benefit attribute becomes essential. Consumers expect the spice taste to be strengthened by reducing the sugar content and the price to be more affordable.

Keywords: consumer, interpretation, instan herbal medicine, perception

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1. Introduction

In the midst of the health crisis due to the COVID-19 pandemic, traditional medicine is an alternative that the community can use to break the chain of transmission and maintain body immunity. Jamu is well-known as traditional herbal medicine that has been practiced for centuries in Indonesian society to maintain a healthy perception. Herbal medicine can function to maintain the body's immunity to avoid the virus that is spreading. Plants that can be consumed and made into herbs for immune boosters include ginger, turmeric, and ginger.

The properties contained in biopharmaceutical plants are an attraction for the community both for their consumption and for trade. Biopharmaceutical plant commodities that have a significant contribution to Indonesia's horticultural production are ginger (183.52 thousand tons), turmeric (193.58 thousand tons), and curcuma (27 thousand tons) (BPS, 2019). Indonesia is also one of the leading players in the trade of rhizomes for the harmonized system (HS) 0910 group, which includes ginger, turmeric, curcuma, and other spices (BPS, 2017).

Local wisdom of the Indonesian people recognizes ginger, curcuma, and turmeric plants for various traditional treatments, such as ginger to treat colds, turmeric to treat diarrhea, and curcuma to eliminate body odor (Sharma et al., 2021). However, in modern research, this type of biopharmaceutical plant has the ability to treat several chronic diseases because of its antioxidant, anti-inflammatory (Hayu, 2019), anti-tumor, anti-acidogenic and neuroprotective properties (Hermawan, 2020). The plant raw materials and types of herbal medicine produced are shown in Table 1.

Instant herbs are refreshing but do not last long and are not easy to carry. AIG Bunda Nisa SMEs tries to produce herbal medicine in the form of ready-to-drink or powder so that it has a long shelf life and is easy to carry everywhere. The process used in making ready-to-eat powdered herbal drinks uses a crystallization process so that it is in the form of granules that can be consumed quickly. The crystallization process can obtain crystal products with the expected quality. The parameters that determine the quality of crystals are the crystal size distribution, crystal purity, and crystal shape (Puguh, 2003). The purpose of the research is to understand consumer perceptions and interpretations of instant herbal products.

Table 1: Medicinal Plant Raw Material.

Name	Ingredients
Beras Kencur	Rice (Oryza Sativa), Aromatic ginger (Kaempferia Galanga.L)
Kunyit Asem	Turmeric (Curcuma Domestica Vahl) & Tamarind (Tamarindus Indica L.)
Sinom	Tamarind (Tamarindus Indica L.) & Turmeric (Curcuma Domestica Vahl)
Cabe Puyang	Chili *Jamu* (Piper Retrofractum Vahl) & *Lempuyang* (Zingiber spp)
Pahitan	*Sambiloto* (Andrographis Paniculata Ness) & *Brotowali* (Tinospo-racrispa L)
Kunci Suruh	*Temu Kunci* (Boesenbergia Pandurata) & Betel (Piperbetle L.)
Kudu Laos	Mengkudu (Morinda Citrifolia L.) & Lengkuas (Alpinia Galanga)
Gajahan	Aromatic ginger (Kaempferia Galanga.L), Turmeric (Curcuma Domestica Vahl), Curcuma (Curcuma Xanthorhisa Roxb), *Lem-puyang* (Zingiber spp), *Simbukan* (Paederis Foetida L.), *Beluntas* (Plucea Indica L.), *Kunci* (Boesenbergia Pandurata) & *Cowekan* (Centella Asiatica)
Temulawak	Curcuma (Curcuma Xanthorhisa Roxb)
Sari Rapet	*Temu Kunci* (Boesenbergia Pandurata), Betel (Piperbetle L.), *Pinang* (Areca Catecu L.), *Gambir* (Uncaria Gambir), *Kenanga* Flower (Cananga Odorata), White Pomegranate (Punica Grana-tum), *Beluntas* (Plucea Indica L.)

2. Research Method

The research locus is located in Semarang city and regency, Central Java Province in Indonesia, and its surrounding areas. The considerations for choosing the location are, first, it considers the sample consumers based on demographic segmentation, including gender, age, education, and occupation (Agustini, 2003). Second, the location is also a marketing area for AIG Bunda Nisa's instant herbal products. To predict peo-ple's attitudes towards multi-attribute processed herbal instant herbal products using a quantitative approach with a survey method. Data sourced in this study were gathered from primary and secondary data. Primary data was obtained through interviews and questionnaires, while secondary data was gathered through literature studies relevant to the research.

Sampling was taken purposively, involving respondents who had tried or drank the instant herbal product AIG Bunda Nisa. A total of 94 respondents with respondent characteristics were identified based on gender, age, education level, and occupation, as shown in Table 2.

The herbal variants used as the testing object include instant ginger, curcuma, and sour turmeric. The attributes that will be assessed by consumers through Fishbein's Multi-attribute analysis are (1) Price, (2) Taste, (3) Benefits, (4) Texture, (5) packaging,

Table 2: Respondent characteristics (N=94).

Characteristics of Respondents		Total	Percentage (%)
Gender	Male	23	24.5
	Female	71	75.5
Age	19-26	18	19.1
	27-34	13	13.83
	35-42	23	24.47
	43-50	25	26.60
	51-58	14	14.89
	> 59	1	1.06
Education Level	Junior high school	2	2.13
	Senior high school	75	79.8
	Diploma/Bachelor	17	18.09
Occupation	Civil servants	6	6.38
	Students	15	15.96
	Worker	1	1.06
	Housewife	22	23.4
	Self-employed	42	44.68
	Teacher	2	3.19
	Private sector employee	5	5.32
Average Household Income	< 1.000.000	18	19.15
	1.000.000 – 2.500.000	16	17.02
	2.500.000 – 5.000.000	53	56.38
	>5.000.000	7	7.45
Marriage Status	Married	75	79.79
	Not Married	19	20.21
Family Members	1 – 2 people	3	3.19
	3 – 4 people	55	58.51
	5 – 6 people	33	35.11
	7 – 8 people	3	3.19

Source: Data Processed (2022)

(6) legality, and (7) ease of obtaining. The questionnaire consists of three parts, including (1) consumer consideration factors for consuming processed herbal instant herbal products, (2) evaluation of consumer interests, (3) evaluation of consumer confidence in instant herbal products. Aspects of measurement, scale, and answer criteria are illustrated in Table 3.

Descriptive percentage analysis was involved to examine consumer characteristics and the purchasing decision process of instant herbal products. Fishbein's multi-attribute

TABLE 3: Aspects of measurement, scale and criteria.

Question Section	Type	Level
Factors for consideration of respondents consuming processed herbal instant herbal products	Multiple choice	-
Evaluation of consumer interest (ei) on the attributes of processed herbal instant herbal products	Likert scale	1 = strongly unimportant 5 = strongly important
Evaluation of consumer confidence (bi) on the attributes of processed herbal instant herbal products	Likert scale	1 = Poor 5 = Excellent

analysis is adopted to describe consumer attitudes towards a product or brand, which is determined by two things, namely: trust in the attributes of the product or brand (bi component) and evaluation of the importance of the attributes of the product (ei component) (Sumarwan, 2011). Fishbein's multiattribute model can provide information about consumer perceptions of existing products, the relationship between product knowledge possessed by consumers, and attitudes towards products with respect to the characteristics or attributes of these products. The Fishbein multi-attribute model formula is as follows:

$$A_0 = \sum_{i-1}^{n} b_i$$

Information:

Ao : Attitude towards instant herbal preparations

bi : The strength of consumer confidence in attributes to-i

ei : Consumer evaluation (interest) on attributes to-i

n : The number of attributes possessed by instant herbal preparations

i : Attribute or feature

The Importance Performance Analysis (IPA) method is also used to analyze consumer satisfaction with instant herbal products. This method explains the relationship between the level of consumer interest in the diversification of processed herbal instant herbal products with the level of product attribute performance that results in the value of conformity to consumer expectations. Analysis with this IPA method maps attributes into four quadrants, namely (I) Main Priority Quadrant, (II) Maintain Achievement Quadrant, (III) Low Priority Quadrant, and (IV) Excessive Quadrant. The formula used is as follows.

$$Tki = \frac{Xi}{Yi} \times 100\%$$

Information:

Tki : Consumer suitability

Xi : Performance level score

Yi : Importance score

3. Result and Discussion

There are many factors that can cause consumers to choose and consume instant herbal products. The results showed that respondents' motivation in consuming instant herbal medicine was 68.1% to maintain health, as illustrated in Figure 1.

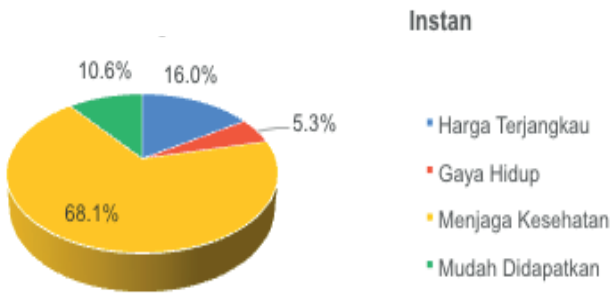

Figure 1: Respondents' reasons for consuming instant herbal products.

Based on the type of instant herbal medicine consumed by consumers, respectively: ginger (30%), curcuma (26%), and turmeric (21%). Meanwhile, the least consumed types of instant herbal medicine were herbal medicine products (a combination of all ingredients or types of herbal medicine) (5%), *Beras Kencur* (2%), and eucalyptus (1%). This is in line with the results of Ridwan's research (2020), which remarked that the types of herbs that are most often consumed and are favorites are *Beras Kencur*, tamarind turmeric, and ginger. Furthermore, almost the majority of consumers who have consumed herbal medicine are satisfied and happy to consume herbal medicine amid the Covid-19 pandemic. Approximately 63.82% of the public regularly consume herbal medicine during the Covid-19 pandemic. The following Figure 2 presents the percentage of consumption of types of instant herbal medicine per month.

Public enthusiasm for using herbal medicine to increase endurance during the COVID-19 outbreak is very high (Winahyu, 2020). Costs incurred by 35% of consumers to consume instant herbal medicine ranged from IDR 51,000 to 75,000 per month, as shown in Figure 3. This is in line with research by Defitasari et al. (2022), which stated that traditional herbal medicine consumers are dominated by women aged 36-45 years

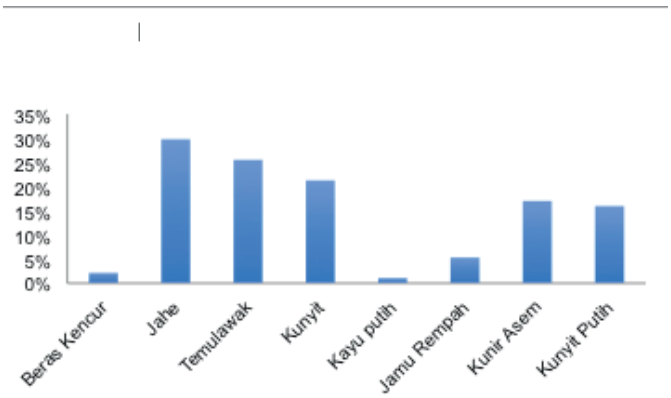

Figure 2: Consumption of types of instant herbal medicine per month.

with married status, high school education, working as private employees, and income of IDR 1,500,000 to IDR 3,000,000.

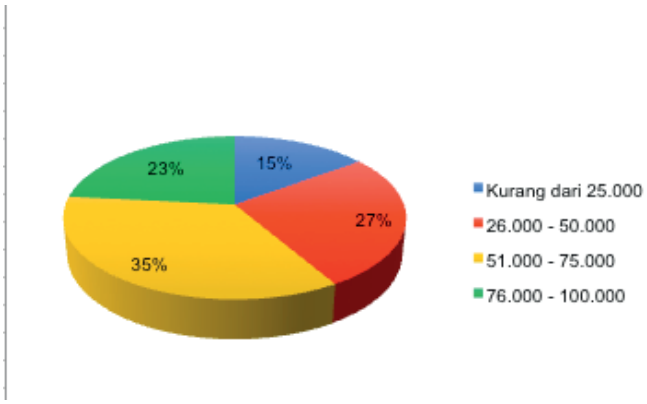

Figure 3: Expenditure of consumption of instant herbal medicine per month.

Considering the location of purchase, 38.3% of consumers buy instant herbal medicine near their homes, followed by traditional markets, supermarkets, souvenir centers, near their workplaces, and online shopping.

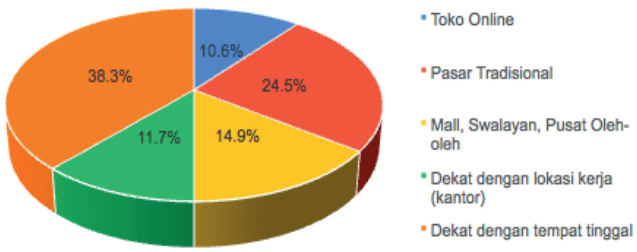

Figure 4: Consideration of the location of buying instant herbal medicine.

Several factors are taken into consideration by consumers consuming instant herbal products, including a) a large variety of products, b) taste and quality, c) price, d) ease of obtaining, and e) product legality. The taste and quality factors are consumers' primary considerations in consuming instant herbal products. This is in line with Rosita's research (2020) that purchasing decisions for herbal products are influenced by halal labels, product prices, taste, efficacy, ease of obtaining, proximity to sellers, information in brochures, information from friends, and the concept of back-to-nature (Rosita, 2020).

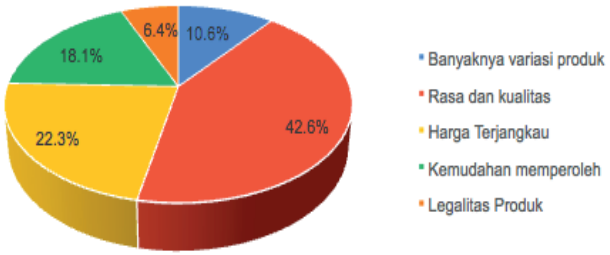

Figure 5: Consumers' motivation to consume instant herbal products.

Meanwhile, 34% of consumers obtain information related to instant herbal products through exhibition information channels, and the rest through online, friends, and information from close relatives, as illustrated in Figure 6.

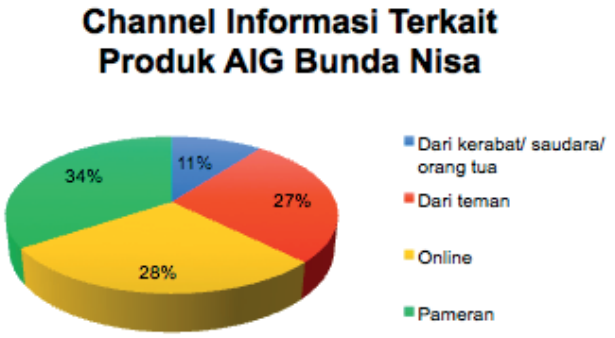

Figure 6: Instant herbal product information channel.

The results of consumer evaluations show that the ease of obtaining processed herbal instant herbal products has a score of 4.59 and is followed by the benefit attribute with a score of 4.50. Both are essential factors for consumers in choosing instant herbal products. The greater the average score (ei) describes the importance of these attributes

for consumers. Table 4 informs frequency of consumer interest assessment (ei) and analysis of different tests for attributes of instant herbal products.

TABLE 4: Frequency of consumer interest assessment (ei) and analysis of different tests for attributes of instant herbal products.

Product	Attribute	Answer Frequency					e_i	Category	F-statistic	P-value[a]
		SU	UI	A	I	SI				
Instant herbal product	Price	1	35	29	20	9	3.01	Average	50.145	0.00
	Taste	0	1	32	35	26	3.91	Important		
	Benefit	0	0	7	33	54	4.50	Strongly Important		
	Texture	0	2	35	41	16	3.76	Important		
	Packaging	0	0	42	44	8	3.64	Important		
	Legality	0	0	19	42	33	4.15	Important		
	Ease of Obtaining	0	0	3	33	58	4.59	Strongly Important		

Note: SI = Strongly Important; I = Important; A = Average; UI = Unimportant; SU = Strongly Unimportant; e_i = Importance evaluation score; [a]Different test with ANOVA

The attribute pattern shows a distribution of importance that is almost the same, except for the price attribute. Sequentially, consumers' interests in the attributes of processed herbal instant herbal products are as easy to obtain, benefits, taste, legality, packaging, and price, respectively. Figure 7 shows the distribution of the strength of each attribute contained in the product.

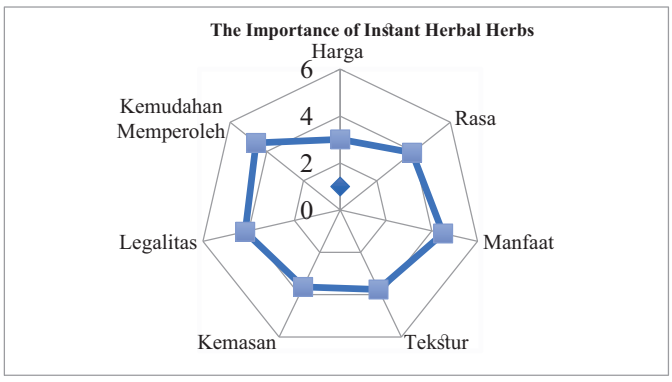

Figure 7: The distribution of attribute strength based on the evaluation score of consumer interest on each attribute of processed instant herbal products.

The results also remark the frequency of consumer confidence assessment (b_i) and the analysis of different tests for each attribute shows a significant difference ($p < 0.05$). This shows that consumers have different beliefs about all attributes.

TABLE 5: Frequency of consumer confidence assessment (b_i) and analysis of different test attributes of price, taste, benefits, texture, packaging, legality of instant herbal products.

Product	Attribute	Answer Frequency					b_i	Category	F-statistic	P-value[a]
		P	I	A	G	E				
Instant herbal product	Price	0	20	46	20	8	3.17	Average	43.929	0.00*
	Taste	0	1	21	47	25	4.02	Good		
	Benefit	0	0	2	34	58	4.60	Excellent		
	Texture	0	0	37	43	14	3.76	Good		
	Packaging	0	1	43	37	13	3.66	Good		
	Legality	0	0	17	45	32	4.16	Good		
	Ease of Obtaining	0	0	5	49	40	4.37	Excellent		

Note: P = Poor; I = Insufficient; A = Average; G = Good; E = Excellent; [a]Different test using ANOVA; *significance $p<0.05$

Based on Table 5, it is known that the benefit attribute acquires the highest score (4.60). This means that the benefit attribute is believed by consumers to have excellent benefits. Next, the score (4.37) is the attribute of ease of obtaining, and the lowest score of (3.17) is the price. This is similar to the results of Yulianto (2009), which noted that the attributes of advertising, brand, price, and the efficacy of packaged herbal powders are considered by consumers to consume instant herbal medicine.

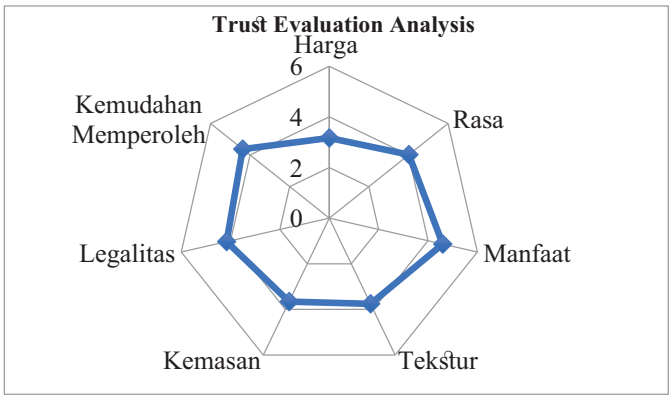

Figure 8: Attribute strength distribution based on consumer trust on instant herbal processed products.

Consumer attitudes as a whole showed positive results towards the attributes of AIG Bunda Nisa's instant herbal products with a total score of 111.25. Table 6 informs the multi-attribute analysis of fishbein products from AIG Bunda Nisa.

In general, half of the attributes of processed herbal instant herbal products received positive attitudes from consumers, except for texture and packaging attributes which received neutral consumer attitudes, and price attributes received negative attitudes from consumers. A positive attitude of consumers shows that the product can be

Table 6: Fishbein multi-attribute analysis results for instant herbal products.

Product	Attribute	Interest Evaluation (ei)	Trust Evaluation (bi)	Score (A_o)	Consumer Attitude
Instant herbal product	Price	3.17	3.17	10.05	Negative
	Taste	4.02	4.02	16.17	Positive
	Benefit	4.60	4,.60	21.12	Very Positive
	Texture	3.76	3.76	14.10	Neutral
	Packaging	3.66	3.66	13.39	Neutral
	Legality	4.16	4.16	17.30	Positive
	Ease of Obtaining	3.17	3.17	10.05	Positive
	Ao total			**111.25**	**Positive**

accepted by consumers where in general, the attributes possessed are in accordance with what is expected. Meanwhile, the quality must be improved for products with neutral and negative consumer attitudes, especially on attributes that receive low scores, so that consumer attitudes become positive towards AIG Bunda Nisa's instant herbal products.

Furthermore, the research results indicate that there is a relationship between attitudes and the level of consumer knowledge on the behavior of people consuming traditional herbal medicine on a regular basis. Meanwhile, community behavior is closely related to experience and knowledge (Siregar et al. 2021). Approximately 93.33% of respondents perceive that herbal medicine is natural, made from plants that contain health benefits, 90% is safe because herbal medicine does not use preservatives. In addition, 73.33% is affordable because the ingredients are easily available in the market, can also be grown in the yard. Herbal medicine carrying 83.33% is believed to be more effective in overcoming disease, 93.33% its good taste can attract people's interest to continue to like to consume herbal medicine. People assume that natural medicines or traditional medicines are cheaper, assessing that the side effects of traditional medicines are lighter than modern medicines (Novianti, 2017)

The results of the Chi-Square test revealed that there is no relationship between consumer attitudes based on respondents' characteristics of gender, age, occupation, last education, and marital status ($p > 0.05$), except for the characteristics of respondents' family income there is a significant relationship with consumer attitudes ($p < 0.05$).

Based on the analysis of the level of suitability (Importance Performance Analysis), it is known that the instant herbal medicine products of AIG Bunda Nisa are following the interests of consumers. It can be seen that the total average score for performance on

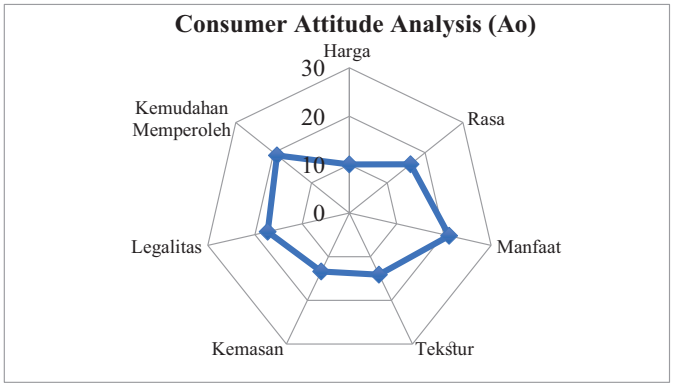

Figure 9: Distribution of consumer attitudes towards the attributes of processed herbal instant herbal products.

Table 7: Chi-Square test between consumer attitudes to consumer characteristics.

Consumer Attitude *Characteristics of respondents	Asymptotic Significance (2-sided)
Ao*Gender	0.457
Ao*Age	0.966
Ao*Occupation	0.297
Ao*Education level	0.223
Ao*Household income	0.024*
Ao*Marriage Status	0.961

Note: *significance $p<0.05$

consumer interests is 3.94 while the average performance score for AIG Bunda Nisa's herbal medicine products is 3.96 as shown in Table 8

Table 8: Average performance scores, expectations, conformity and hold-action scores.

No	Attribute	Interest Level (Yi)	Performance Level (Xi)	Conformity Level (Tki)	Decision
1	Price	3.01	3.17	105.30	Hold
2	Taste	3.91	4.02	102.72	Hold
3	Benefit	4.50	4.60	102.13	Hold
4	Texture	3.76	3.76	100.00	Action
5	Packaging	3.65	3.66	100.29	Action
6	Legality	4.15	4.16	100.26	Action
7	Ease of Obtaining	4.61	4.37	94.92	Action
	Average	**3.94**	**3.96**	**100.54**	

From the calculation of the level of conformity between product performance appraisals and consumer interests, a special form of assessment is the basis for a decision to maintain achievement (hold) or take action (action). The benchmark for decision-making limits is 100.54%, which is the average value of the level of conformity

of all attributes. The average value of importance and performance is in Table 11, then a Cartesian diagram is drawn in four quadrants. The purpose of using a Cartesian diagram is to see more detail the attributes that need to be improved. The results of the division of each attribute in each quadrant are shown in Figure 10.

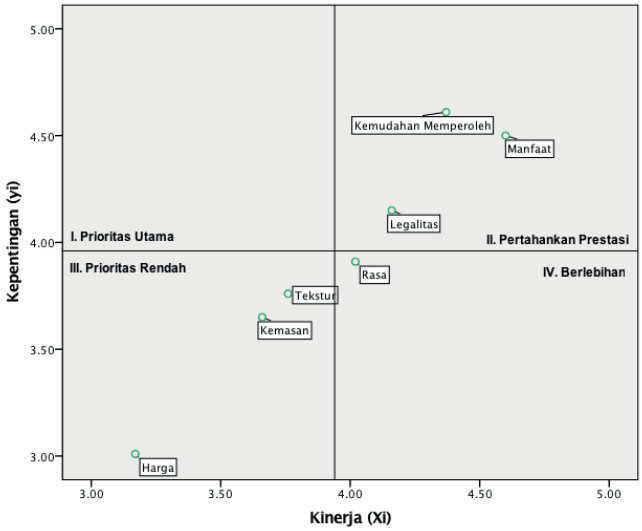

Figure 10: IPA results diagram of instant herbal medicine product attributes.

None of the attributes are included in quadrant I or top priority. The attributes that are in quadrant II (maintain achievement) include attributes of benefits, legality, and ease of obtaining. Consumers hope that the ease of obtaining products can be increased through promotions, exhibitions, or distribution through shops. While quadrant III (low priority) describes less important attributes, influencing consumers to consume the product, and its performance is also normal. There are three attributes included in quadrant III, namely price, texture and packaging attributes. The price is considered by consumers to be too expensive. The texture of the product is not uniform/homogeneous, some are rough, and some are smooth so that it affects the taste, and information related to the benefits of the product can be added to the packaging.

In quadrant IV (excessive), there are less important attributes according to consumers, but the implementation of these attributes' performance is felt excessive. In other words, consumer expectations for this attribute are low, but the performance is significantly high. What is considered less important is taste. According to consumers, the taste is more dominant in sugar, so it is necessary to develop product variants without sugar for consumers who are on a sugar diet. For instant ginger products, the ginger taste sensation is less robust when compared to *Gepuk ginger.*

4. Conclusion & Recommendation

From the results of the study, it can be concluded that the types of instant herbal medicine that are often consumed by consumers are: ginger 30%, curcuma 26%, and turmeric 21%, respectively. The motivation for 68.1% of consumers to consume instant herbal medicine is for health. Meanwhile, taste and quality are the main considerations in consuming the product. In addition, the benefit attribute is also considered important. Lastly, consumers expect that the spice taste is strengthened by reducing the sugar content and that the price is not too high. The results of the study recommend the need to obtain people used to drinking instant herbal herbs such as tea or coffee through various events in various forms of packaging by exposing the values of benefit.

References

[1] Agustini NK. Segmentasi Pasar, Penentuan Target dan Penentuan Posisi. Jurnal Ekonomi-Manajemen-Akuntansi. 2003;1(2):91–106.

[2] BPS. Statistik Pertanian Hortikultura Provinsi Jawa Tengah 2017-2019. Semarang: Badan Pusat Statistik Provinsi Jawa Tengah; 2020.

[3] BPS. Statistik Pertanian Hortikultura Kabupaten Semarang 2017-2018. Ungaran: Badan Pusat Statistik Kabupaten Semarang. 2019.

[4] Defitasari SW, Indah PN, Syah MA. Analisis Preferensi Konsumen Terhadap Minuman Jamu Tradisional di Kecamatan Gondang Kabupaten Nganjuk Analysis of Consumer Preferences for Traditional Herbal Drinks in Gondang Subdistrict Nganjuk Regency. Jurnal Ilmiah Mahasiswa Agroinfo Galuh. 2022;53(42):5–14.

[5] Dewati R, Saputro WA. Persepsi Konsumen Terhadap Pembelian Produk Herbal Di Kabupaten Sukoharjo. AGRISAINTIFIKA: Jurnal Ilmu-Ilmu Pertanian. 2020;4(2):144–152.

[6] Hayu RS. Smart Digital Content Marketing, Strategi Membidik Konsumen Millennial Indonesia [Jurnal Manajemen dan Kewirausahaan]. JMK. 2019;4(1):61–69.

[7] Hermawan Y. Perhitungan Harga Pokok Produk Minuman Serbuk Instan dengan Metode Full Costing di UPT Materia Medica Batu. Cakrawala. 2020;14(2):183–197.

[8] Novianti, D. Potensi dan Pengembangan Jenis Tanaman Obat di Desa Meranjat Kecamatan Indralaya Selatan. Sainmatika: Jurnal Ilmiah Matematika dan Ilmu Pengetahuan Alam. 2017;14(1):45-52.

[9] Ridwan. Selama Pandemi Covid-19, Konsumsi Jamu di Indonesia Meningkat. [diakses 19 Oktober 2020]. Available at

https://juaranews.com/berita/40650/05/08/2020/selama-pandemicovid-19-konsumsi-jamu-di-indonesia-meningkat

[10] Setyopratomo P, Siswanto W, Ilham HS. Studi eksperimental pemurnian garam NaCl dengan cara rekristalisasi. Unitas. 2003;11(2):17–28.

[11] Sharma A, Khamar D, Cullen S, Hayden A, Hughes H. Innovative drying technologies for biopharmaceuticals. Int J Pharm. 2021 Nov;609:121115.

[12] Simamora B. Panduan Riset Perilaku Konsumen. Jakarta (ID): PT. Gramedia Pustaka Utama. 2004.

[13] Siregar RS, Siregar AF. Analisis Hubungan Sikap dan Tingkat Pengetahuan terhadap Perilaku Masyarakat Kota Medan Mengonsumsi Jamu Tradisional di Masa Pandemi Covid–19. In Prosiding Seminar Nasional Pertanian (Vol. 3, No. 1). 2021.

[14] Sumarwan U. Perilaku Konsumen: Teori dan Penerapannya dalam Pemasaran. Edisi Kedua. Bogor (ID): PT Ghalia Indonesia. 2011.

[15] Walpole. Pengantar Statistika Edisi 3. Jakarta (ID): Gramedia; 1992.

[16] Winahyu AI. Peneliti: Semakin Banyak Orang Minum Jamu karena Covid-19 [Accessed on 19 Oktober 2020]. Available at https://mediaindonesia.com/read/detail/329999-peneliti-semakinbanyak-orang-minum-jamu-karena-covid-19

[17] Yulianto. Analisis Preferensi Konsumen Jamu Serbuk Kemasan di Kota Bogor, Jawa Barat. Skripsi. FP. IPB. 2009.