Indonesian Journal of Advanced Research (IJAR)
Vol. 4, No. 12, 2025: 2639-2652

Kano Model Study on Vitanas Pineapple Processed Product Packaging in Pemalang: Analysis of Consumer Satisfaction and Expectations

Aden Nuzuli Gita Alkhamdi[1], Watemin[2*], Pujiati Utami[3], Dumasari Lumongga[4]
Program Studi Agribisnis, Universitas Muhammadiyah Purwokerto, Indonesia
Corresponding Author: Watemin watemyn@ump.ac.id

A R T I C L E I N F O

Keywords: Pineapple, Consumer Preferences, Kano Model, Packaging

Received : 27, October
Revised : 29, November
Accepted: 31, December

A B S T R A C T

This study aims to analyze consumer satisfaction and expectations regarding the 180 ml Vitanas pineapple fruit juice drink product packaging using the Kano Model method. The research was conducted in Pemalang Regency from June to July 2025, involving 50 respondents selected thru accidental sampling. Data was collected thru questionnaires and analyzed by grouping packaging attributes into must-be, one-dimensional, attractive, indifferent, or reverse categories. The research results show that brand attributes fall into the must-be category, while practical packaging, attractiveness and product information (nutritional information, composition, production date, and others) fall into the one-dimensional category, which has a significant impact on consumer satisfaction. The yellow packaging color falls into the attractive category. This finding provides strategic recommendations for the development of Vitanas product packaging to enhance competitiveness and increase customer satisfaction.

INTRODUCTION

Horticulture is a branch of agricultural science that studies the cultivation of fruits, vegetables, and ornamental plants. Horticulture comes from the word "hortus" (= garden) and "colere" (= to cultivate). Favorable climatic and geographical conditions make Indonesia suitable for growing many fruit crops. Indonesian horticultural products have high economic value and great growth potential. From a production perspective, Indonesia's vast territory and diverse agroclimatic conditions allow for the development of various horticultural plant varieties, both tropical and subtropical (Rahmadhanti et al., 2022). This climatic and geographical suitability makes Indonesia have several types of fruit that are leading commodities and can compete in the international market. These leading fruit types include pineapple, mangosteen, banana, and mango. (Latifah, 2020).

Pineapple (*Ananas comosus L.*) is one of the leading fruit commodities in Indonesia (Yudha & Rachmadina, 2023). As one of the typical fruits from tropical countries, pineapples have a sweetness that makes them popular with people of all ages in Indonesia and abroad. (Amalia et al., 2024). Based on data from BPS (2024), the production of pineapples in Indonesia has fluctuated. In 2021, the production was 2.89 million tons, which increased to 3.2 million tons in 2022, and then decreased to 3.15 million tons in 2023. Pineapple is one of the commodities that has proven to have good and broad market opportunities both domestically and internationally. Pineapple plants are very suitable for cultivation in Indonesia, leading to their widespread distribution in the country. One of the most widely cultivated varieties is the honey pineapple. Honey pineapple is a type of local pineapple fruit found in Indonesia. Honey pineapple is a species of pineapple fruit with the main characteristic of being smaller in size than pineapples in general, but honey pineapple has a sweet taste. (Fauzi et al., 2021).

Honey pineapple has many benefits, so it can also be processed into a variety of equally delicious and tasty food and beverage products. Some processed pineapple products include candy, dodol, syrup, crackers, and others. Honey pineapple is a leading commodity in Pemalang Regency, often cultivated on dry land, whether in home gardens or orchard land (Nugraheni et al., 2021). Compared to all regencies and cities in Central Java Province, Pemalang Regency produces the most pineapples annually. Because of its location on the slopes of Mount Slamet and its sandy soil that easily absorbs water, Pemalang Regency is very suitable for growing honey pineapple. The regency is one of the largest honey pineapple producing areas in Central Java (Rahmadhanti et al., 2022).

Pineapple production is abundant every year, so there is a need for product diversification from pineapple processing to increase the selling value of the products produced. This diversification was done to face competitors in the market when the pineapple harvest season arrives. Vitanas is one of the micro, small, and medium enterprises (MSMEs) located in Pemalang Regency that processes pineapple fruit into products with higher selling value. The products produced include pineapple syrup, pineapple juice, pineapple candy, and several foods made from processed pineapple. The most distinctive product of Vitanas MSME is pineapple juice.

Improving the appearance and optimizing the function of packaging became a necessary effort after diversifying products. Packaging not only serves to wrap food, but it can also convey information about the product and make it look more appealing (Hapsari et al., 2023). Packaging is one way to protect products so they are not easily damaged and can be stored and distributed to consumers. During the distribution process, the quality of the product can deteriorate physically, biologically, or chemically. Therefore, product packaging serves for longer storage and maintains product quality (Istifari & Rum, 2023).

UMKM Vitanas is a small and medium-sized enterprise (SME) that produces a product from pineapple juice. UMKM Vitanas is located in Pemalang Regency and is a popular attraction as a center for typical souvenirs from Pemalang Regency. The products made from pineapple juice are pineapple cocktails in 150 ml and 250 ml sizes, pineapple syrup, and pineapple juice drinks in 120 ml, 180 ml, 210 ml, and 330 ml sizes. In this study, the product used is the 180 ml pineapple juice drink. This product has packaging characteristics that can provide both advantages and disadvantages for the packaging itself. Therefore, this research is necessary to determine consumer satisfaction and expectations in order to provide suggestions to Vitanas MSMEs regarding the products they produce and to meet consumer satisfaction and understand their expectations.

The satisfaction and expectations of Vitanas consumers can be analyzed using the Kano Model method. The Kano model aims to categorize product or service features based on how well the product or service can meet customer needs. Kano distinguishes three desired product categories in its model that can influence customer satisfaction. First, the requirements must-be (basic attributes), which, if not met, will lead to significant consumer dissatisfaction. Second, one-dimensional requirements (expected attributes), which, if met, will not increase customer satisfaction, and third, one-dimensional requirements (expected attributes), which, if met, will lead to greater customer satisfaction (Mustakim et al., 2017). Based on the explanation, this study aims to analyze consumer satisfaction and expectations regarding the 180 ml Vitanas pineapple fruit juice drink product packaging using the Kano Model method.

LITERATURE REVIEW

Pineapple Fruit Juice

Pineapple, also known as Ananas comosus, is a tropical fruit that is packed with nutrients and low in calories. This is a great option for people who want to live a healthy lifestyle. The high water content of this fruit (around 86%) helps keep the body hydrated. In a hundred grams, there are about 50 kilocalories per gram of pineapple, 13 grams of carbohydrates, and 1 gram of fiber. Pineapple is also very rich in vitamin C, with one serving meeting over 70% of the daily vitamin C requirement, which helps boost the immune system and functions as an antioxidant. Additionally, pineapples contain the enzyme bromelain, which aids in protein digestion, and a number of minerals, including manganese, which is important for metabolism and bone health. Furthermore, this fruit contains vitamin B6, folate, and small amounts of potassium, magnesium, and copper, which help maintain heart health and blood pressure. Additionally, pineapples

contain the phytochemical bromelain, which acts as an anti-inflammatory agent (Sebayang & Ritonga, 2021).

Pineapple fruit juice is a liquid produced by pressing pineapple fruit pulp, followed by a process appropriate for its category. Pineapple fruit juice has the same taste as pineapple fruit, so it is often used as a beverage or added to the processing of certain products to enhance their flavor and nutritional content (Rahayu et al., 2020). Processing pineapples into ready-to-drink pineapple juice can not only increase the product's value but also reduce the risk of losses for farmers (Perdani et al., 2017). Pineapple fruit juice is a product that is becoming increasingly popular in society, known for its sweet and sour taste and bright yellow color. This fruit juice not only has a refreshing taste but is also rich in nutrients beneficial for health, such as vitamin C, vitamin A, and the enzyme bromelain, which aids digestion and has anti-inflammatory properties. Utilizing pineapple as a raw material for beverages can not only increase food product diversification but also reduce post-harvest waste and support the sustainability of agricultural businesses (Wiyono, 2017).

Packaging

Initially, packaging only served as a container or wrapper that protected, covered, or facilitated the transportation of products. However, as time went on, packaging had to make consumers more interested in buying the product. Packaging design is not just about designing; it also requires ideas that can showcase the advantages of a brand or product so that the design can "sell." Additionally, the packaging appearance must be attractive and eye-catching so that consumers will be drawn to it (Anasrulloh & Basiron, 2017).

The packaging shape is used to indicate the size of the product contained within. Customers use shape as a perception to know what's inside the goods or how heavy they are. Some larger packaging, typically found on dry foods, is designed to make it more appealing to customers and make it stand out from competing products. Packaging shape significantly influences buyer psychology, and attractive and appealing packaging will make buyers more interested in purchasing. This is very common during certain events, such as holidays and year-end breaks. Products are usually packaged in bundles, making them more economical (Mufreni, 2016).

Consumer Preferences

Interest or preference can be defined as a subject's enduring tendency to be drawn to something and feel pleased about having chosen it (Utami & Kusumawati, 2017). Perception is the process of capturing information about social objects and events experienced by humans in their environment. There are three factors that can influence public perception, namely: (1) the perceiver, the interpretation made by an individual influenced by their personality; (2) the target and object, the individual's tendency to group nearby objects; (3) the situation, the elements of the individual's surrounding environment. These three factors will shape an individual's perception in making a decision (Siregar & Rahmansyah, 2020). By understanding customer preferences, sustainable

marketing strategies aim for a product that is still appealing to customers when sold or marketed (Aiman et al., 2017).

Kano Model

The Kano model is a quality management framework created by Dr. Noriaki Kano in the 1980s and used to understand and classify customer preferences for product or service features. This model is highly beneficial for product development, quality management, and marketing strategies as it can help companies prioritize features that truly enhance customer satisfaction. The model assumes that not all product features affect customer satisfaction in the same way. Some features can greatly increase satisfaction if present, but their absence is not disruptive; conversely, other features are considered absolute and their absence will cause significant dissatisfaction (Tarumingkeng, 2025). The Kano model essentially consists of three categories of consumer responses that always emerge. There are three categories of responses: no effect, which means that customer satisfaction is unaffected by the presence of the service; reversal, which means that customers are more satisfied if the service meets expectations; and questionable, which means that customers are satisfied or dissatisfied regardless of whether the service is provided.

Packaging Design

Packaging design cannot be separated from esthetics. Esthetics come from coloring, product information, and the fact that it is designed to win the hearts of buyers when they choose a product. Currently, there are many materials that can be used for self-packaging, such as recycled paper, aluminum foil, and plastic. Each ingredient has a unique function and purpose depending on the type of product being protected (Mufreni, 2016). To create effective and "sellable" packaging, the packaging design must consider various types of products, such as food, souvenirs, crafts, toys, tools, utensils, cosmetics, and electronics. This includes determining the supporting graphic design characters, colors, typography, illustrations, product characteristics, and other aspects. (Anasrulloh & Basiron, 2017).

Information on the Packaging

Packaging is the container in which an item is stored to keep it safe, attractive, and catch the buyer's attention. Additionally, it can serve as a communication tool between producers and potential buyers, as the packaging design contains information that potential buyers need to know in order to feel familiar with the packaged product. The more complete the information contained in the packaging, the clearer and more convincing the potential buyers' perception. Good packaging is packaging that can protect the product's contents and provide complete information about the product to the buyer. Based on the Regulation of the Food and Drug Supervisory Agency (BPOM) No. 31 Tahun 2018 Regarding Processed Food Labels, the mandatory information to be included on the packaging label of processed food products consists of the product name, a list of ingredients used, net weight or net content, the name and

address of the producing or importing party, halal certification if required, production date and code, expiration date, distribution permit number, and the origin of the food ingredients. Product information is very important for buyers, and if buyers still misuse the product due to unclear information not stated on the packaging, consumers must be dealt with according to the Republic of Indonesia Law Number 8 of 1999 Concerning Consumer Protection (Dikti) (Mukhtar, S., & Nurif, 2015).

Packaging Materials

Products are typically divided into three categories: solid, liquid, and granules. Handling this product varies, but generally, the packaging must be airtight to protect the product from light and air for longevity. There are 5 main packaging materials commonly used by both large industries and MSMEs: plastic, metal foil, styrofoam, glass, and paper (Mufreni, 2016).

Packaging Color

Color is the most important stimulus that creates visual appeal. When a product has a strong color character, it already has the potential to influence consumer perception and stand out from other products, because competition in marketing is not only about quality but also about product perception (Nugrahani, 2015).

METHODOLOGY

This research uses a descriptive approach by describing and interpreting something that is currently happening in the research object. The collected data will be processed and analyzed quantitatively and qualitatively to determine consumer expectations and satisfaction with Vitanas product packaging. This research was conducted for Vitanas MSMEs in Pemalang Regency from June to July 2025. This research uses the accidental sampling technique, which is one of the techniques used to determine a sample where anyone the researcher happens to meet can be used as a sample, if the person encountered is considered suitable as a data source. In the accidental sampling technique, the sample is not predetermined. Researchers directly collected data from the sampling units they encountered (Meidatuzzahra, 2019). The population in question refers to potential consumers, 50 of whom were selected. Questionnaires were distributed to the respondents to gather information.

The determination method for determining variables in this study uses a descriptive method. This research focuses on consumer preferences for design attributes, information on packaging, packaging materials, and packaging colors, making consumers the primary respondents. For the derived variables in this study, they are Practical, Attractive, Brand, Nutritional Content, Composition, Production Date, Expiration Date, Net Weight, Halal Information, Distribution Permit, Manufacturer's Name and Address, Strong Material, Environmentally Friendly Material, Transparent Color, White Color, Yellow Color. Therefore, there are 16 Kano question variables that are processed into positive and negative questions.

Data analysis in this study used the Kano Model method, starting with categorizing each variable according to the Kano model, which was then answered by respondents based on the Kano evaluation table shown in Table 1. Next, the categories were summed for each variable and its respective categories across all respondents. The results of this summation were then compared to determine the category for each variable.

Table 1. Kano Evaluation

Consumer Needs		*Dysfuncional*				
		1.Like	2. Hope	3. Neutral	4.Tolerance	5. Dislike
Functional	1. Like	Q	A	A	A	O
	2. Hope	R	I	I	I	M
	3. Neutral	R	I	I	I	M
	4. Tolerance	R	I	I	I	M
	5. Dislike	R	R	R	R	Q

Source : Walden (1993)
Description :
M : Must be; A : Attractive; O : One Dimensional; I : Indifferent; R : Reserve; Q : Questionable

After determining the category of each variable, the next step is to determine the level of consumer satisfaction and dissatisfaction using the formula :

a. Extent of Satisfaction

$$ES = \frac{A+O}{(A+O+M+I)} \quad (1)$$

b. Extent of Disatisfaction

$$ED = \frac{O+M}{(A+O+M+I)(-1)} \quad (2)$$

Consumer satisfaction and dissatisfaction levels are calculated based on the results of several variables as follows (Mastrisiswadi et al., 2018) :

a. The highest satisfaction level value is obtained from the variable with the value closest to 1 on several variables. This means that if this variable is met, it will provide a high level of satisfaction.
b. The lowest disatisfaction value is obtained from the variable with the value closest to -1 on several variables. This means that if this variable is absent, it will result in a high level of disatisfaction.
c. The lowest satisfaction level and highest dissatisfaction were obtained with values closest to 0 on several variables. This indicates that these variables do not influence consumer satisfaction and dissatisfaction.

d. Variables that impact consumer satisfaction levels, selecting variables with a value above 0.5 (approaching a value of 1).
e. Variables with a dissatisfaction level below -0.5 (approaching -1) indicate that if this variable is absent, it will impact consumer dissatisfaction.

RESULTS AND DISCUSSION

Product Overview

Vitanas MSMEs produce a product from pineapple juice. Vitanas MSMEs are located in Pemalang Regency and are a point of interest as a typical souvenir center of Pemalang Regency. The products produced from pineapple juice are: pineapple cocktails in 150 ml and 250 ml sizes, pineapple syrup, and pineapple juice drinks in 120 ml, 180 ml, 210 ml, and 330 ml sizes. In this study, the product used is the 180 ml pineapple juice drink. As seen in Figure 1, the 180 ml pineapple juice drink product has several packaging attributes with a yellow base color.

Figure 1. Vitanas packaging size 180 ml

Respondent Characteristics

The characteristics of the respondents can be seen in Table 2. The total number of respondents involved in this study was 50.

Table 2. Respondent Characteristics

Respondent Characteristics		%
Gender	Male	34
	Female	66
Age	<20	24
	21-30	26
	31-40	24
	>40	26
Highest Education	Elementary School	12
	Middle School	16
	High School	62
	Associate's / Bachelor's Degree	10
	Master's Degree and above	0
Work	Student / University Student	36
	Entrepreneur	26

	Civil Servant	4
	Other	34
Purchase Purpose	Personal Consumption	80
	Souvenirs	10
	Resold	10
Research Location	Vitanas	48
	Randudongkal	30
	Moga	8
	Taman	4
	Belik	6
	Bantarbolang	2

The ratio of men to women is 34 to 66 percent, with ages evenly distributed between under 20 and over 40 years old, and the highest level of education completed is high school. The most common occupation is student, and the most frequent purchase purpose is for personal consumption. As for the location with the most refills, it's in Vitanas Pemalang itself.

Kano Category

After collecting the data, it was then categorized according to the kano evaluation table. The results of this categorization can be seen in Table 3.

Table 3. Kano Categories

No	Amount						Total	Category
	A	M	O	R	Q	I		
A1	3	2	39	0	3	3	50	O
A2	5	9	30	0	3	3	50	O
B1	8	22	17	0	3	0	50	M
B2	4	10	27	0	3	6	50	O
B3	5	8	31	0	3	3	50	O
B4	9	6	28	0	3	4	50	O
B5	5	17	26	0	2	0	50	O
B6	9	4	18	0	3	16	50	O
B7	4	10	33	1	0	2	50	O
B8	8	10	27	0	3	2	50	O
B9	7	4	17	5	3	14	50	O
C1	5	8	23	1	3	10	50	O
C2	6	9	22	2	3	8	50	O
D1	13	0	8	8	3	18	50	I
D2	9	1	13	6	2	19	50	I
D3	18	2	15	1	3	11	50	A

Description :

A1: Practical, A2: Attractive

B1: Brand, B2: Nutritional information, B3: Composition, B4: Production date, B5: Expiration date, B6: Net weight, B7: Halal information, B8: Distribution permit, B9: Manufacturer's name and address

C1: Strong material, C2: Environmentally friendly material

D1: Transparent color, D2: White color, D3: Yellow color

In Table 3, it can be seen that for all variables (except for variables D1 and D2, which are transparent packaging color and white color), the majority fall into the MAO category. This means that the grade determination is based on the highest count among the must be, attractive, or one-dimensional categories. For variables A1, A2, B2, B3, B4, B5, B6, B7, B8, B9, C1, and C2, which are practical packaging, attractive packaging, nutritional information, composition, production date, expiration date, net weight, halal information, distribution permit, manufacturer's name and address, strong material, and environmentally friendly material, these are One-dimensional categories. The one-dimensional category means that if this variable is met, customer satisfaction will increase. Conversely, if this variable is not met, customers will feel disappointed. One of the attributes, Attractiveness, showed different results from the research conducted by Anugrah (2022) On the packaging of Sapuangin coffee, the results show that the attractive attributes of the coffee packaging fall into the Attractive category.

For variable D3, which is the variable for yellow packaging color, it falls into the Attractive category. The Attractive category means that if this variable is present, it will provide a significant level of satisfaction. However, if this variable is not present, it will not disappoint consumers. Therefore, if the packaging shape of the 180ml Vitanas pineapple fruit juice drink has a dominant yellow color, it will significantly satisfy consumers. Even if it doesn't, it will not disappoint consumers.

As for variable B1, which is the presence or absence of a brand on the packaging design, it is a must-be category. A must-be category means that if this variable is present on the packaging, it will not impact customer satisfaction. Conversely, if this variable is absent, it will lead to a significant level of dissatisfaction. Therefore, the packaging design for this 180 ml pineapple juice product must include the brand. This result shows a slight difference compared to the study conducted by Mastrisiswadi et al (2018) which has research findings that the logo on smoked fish packaging falls into the Attractive category, meaning that if this logo is present on the smoked fish packaging, it will provide a significant level of satisfaction. Conversely, if this variable is not present, it will not disappoint consumers.

Meanwhile, variables D1 and D2, which are transparent and white colors on the packaging, have an indifferent category. The indifferent category means that whether or not this attribute is present will not impact consumer satisfaction and dissatisfaction levels. This means that if the Vitanas 180ml drink is transparent or white on the packaging, it will not affect consumer satisfaction and dissatisfaction.

Satisfaction and Dissatisfaction Levels

Consumer satisfaction and dissatisfaction levels can be seen in Table 4. The highest satisfaction level (approaching a value of 1) is for variable A1, which is the practical packaging design variable. This means that if this variable is met, it will provide a high level of satisfaction. Meanwhile, the lowest dissatisfaction

level (approaching -1) is for variable B5, which is the expiration date information variable on the packaging. This means that if this variable is absent, it will cause a high level of dissatisfaction.

Table 4. Consumer Satisfaction and Dissatisfaction Levels

No	Extent of Satisfaction	Extent of Dissatisfaction
A1	**0,8936170213**	-0,8723404255
A2	0,7446808511	-0,829787234
B1	0,5319148936	-0,829787234
B2	0,6595744681	-0,7872340426
B3	0,7659574468	-0,829787234
B4	0,7872340426	-0,7234042553
B5	0,6458333333	**-0,8958333333**
B6	0,5744680851	-0,4680851064
B7	0,7551020408	-0,8775510204
B8	0,7446808511	-0,7872340426
B9	0,5714285714	-0,5
C1	0,6086956522	-0,6739130435
C2	0,6222222222	-0,6888888889
D1	0,5384615385	**-0,2051282051**
D2	**0,5238095238**	-0,3333333333
D3	0,7173913043	-0,3695652174

The lowest satisfaction level and highest dissatisfaction (approaching a value of 0) were found for variables D1 and D2, which are transparent and white packaging colors. A satisfaction and dissatisfaction level approaching 0 indicates that these attributes do not influence consumer satisfaction and dissatisfaction.

Next, all variables in this study have an impact on consumer satisfaction because all variables are above 0.5 and close to 1. Meanwhile, the 5 variables that have the greatest impact on consumer satisfaction are A1, B4, B3, B7, and A2, namely practical packaging, production date on packaging, composition on packaging, halal information on packaging, and attractive packaging.

For the variables that impact consumer dissatisfaction levels, which are variables with values below -0.5 and approaching -1, these are found in variables A1, A2, B1, B2, B3, B4, B5, B7, B8, B9, C1, and C2, namely practical packaging, attractive packaging, brand on packaging, nutritional information, composition information on packaging, production date information, expiration date information, halal information, distribution permit, name and address of the producer on packaging, strong and environmentally friendly packaging materials. This result implies that if the 180ml Vitanas packaging lacks these variables, it will lead to consumer dissatisfaction.

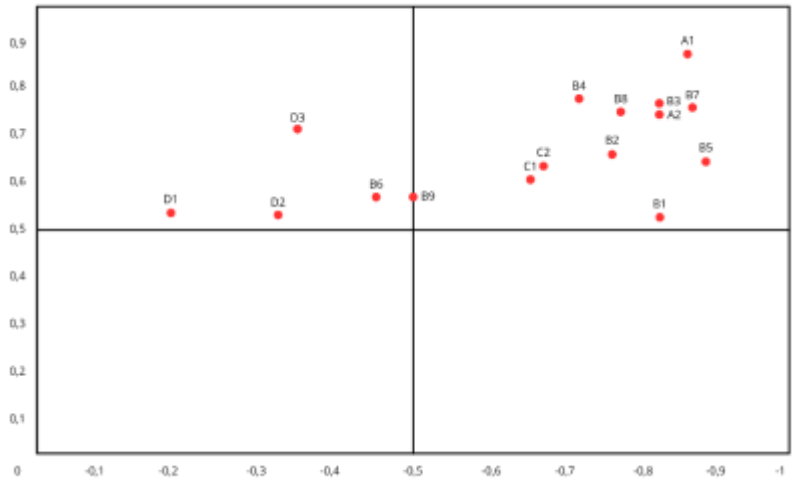

Figure 2. Graph of Kano Satisfaction Coefficient

CONCLUSIONS AND RECOMMENDATIONS

From the results of this study, it was found that the variable that must be present on the 180ml Vitanas beverage packaging is the brand on the packaging (Must be). The variables that need to be developed are practical packaging, attractive packaging, nutritional information, composition, production date, expiration date, net weight, halal information, distribution permit, manufacturer's name and address, strong material, environmentally friendly material (One-dimensional). The more this variable is developed, the more consumer satisfaction will increase, and conversely, if this variable is not developed, it will lead to consumer dissatisfaction. Meanwhile, the variable that, if added, will bring satisfaction to consumers and, if not added, will have no effect on consumers is yellow packaging color (Attractive). The highest satisfaction level is for the practical packaging variable, with a satisfaction score of 0.89, and the highest dissatisfaction level is for the expiration date variable on the packaging, with a dissatisfaction score of -0.89. Hopefully, the results of this research can be used as a suggestion for the Vitanas MSME.

ADVANCED RESEARCH

In the research titled Kano Model Study on Vitanas Pineapple Processed Product Packaging in Pemalang: Analysis of Consumer Satisfaction and Expectations this has some limitations in research. It is hoped that future research can further and more detailedly investigate the variables that need to be developed for the 180 ml Vitanas pineapple juice drink product, and it is also hoped that this research can be extended to other products from Vitanas Pemalang MSMEs so that it can be used as a suggestion for producers to develop their processed products to be much better known to the general public.

REFERENCES

Aiman, A., Handaka, A. A., & Lili, W. (2017). Analisis Preferensi Konsumen Dalam Pengambilan Keputusan Membeli Produk Olahan Perikanan Di Kota Tasikmalaya (Studi Kasus Di Pasar Tradisional Cikurubuk, Kec. Mangkubumi). *Jurnal Perikanan Dan Kelautan*, *8*(1), 146–156.

Amalia, I. F., Setiadi, A., & Handayani, M. (2024). Pendapatan Usahatani Nanas Di Kecamatan Belik Kabupaten Pemalang. *Jurnal Litbang Provinsi Jawa Tengah*, *21*(2), 165–177. https://doi.org/10.36762/jurnaljateng.v21i2.1019

Anasrulloh, M., & Basiron. (2017). Pelatihan Pembuatan Kemasan Packaging Untuk Meningkatkan Pemasaran Produk Olahan Kacang Emping Melinjo. *Jurnal Pengabdian Kepada Mayarakat*, *5*(1), 26–30.

BPOM. (2018). Peraturan Badan Pengawas Obat dan Makanan Nomor 31 Tahun 2018 tentang Label Pangan Olahan. *Badan Pengawas Obat Dan Makanan*, 1–43.

BPS. (2024). Kabupaten Pemalang Dalam Angka 2024. In *Badan Pusat Statistik Kabupaten Pemalang*.

Fauzi, A., Roessali, W., & Nurfadillah, S. (2021). *ANALISIS PREFERENSI KONSUMEN BUAH NANAS MADU DI KECAMATAN BELIK KABUPATEN PEMALANG*. *5*, 1227–1232.

Istifari, G. S., & Rum, M. (2023). Pengaruh Produk, Harga, Kemasan, Dan Label Halal Terhadap Keputusan Pembelian Produk Olahan Ikan Laut Di Kecamatan Socah, Bangkalan. *Jurnal Jimek*, *4*(2), 278–292.

Latifah, N. (2020). *KELAYAKAN USAHATANI NANAS MADU DI DESA BELUK KECAMATAN BELIK KABUPATEN PEMALANG.* Universitas Muhammadiyah Yogyakarta.

Mastrisiswadi, H., Izzhati, D. N., & Setyaningrum, R. (2018). Analisis Preferensi Konsumen Terhadap Kemasan Ikan Asap Dengan Menggunakan Metode Kano. *Rapi Xvii*, 82–88.

Meidatuzzahra, D. (2019). PENERAPAN ACCIDENTAL SAMPLING UNTUK MENGETAHUI PREVALENSI AKSEPTOR KONTRASEPSI SUNTIKAN TERHADAP SIKLUS MENSTRUASI. *Avesina*, *13*(1), 19–23. https://www.e-journal.unizar.ac.id/index.php/avesina/article/view/124

Mufreni, A. N. (2016). PENGARUH DESAIN PRODUK, BENTUK KEMASAN DAN BAHAN KEMASAN TERHADAP MINAT BELI KONSUMEN (STUDI KASUS TEH HIJAU SERBUK TOCHA). *Jurnal Ekonomi Manajemen*, *2*(2), 48–54. https://doi.org/10.35794/emba.v11i1.45579

Mukhtar, S., & Nurif, M. (2015). PERANAN PACKAGING DALAM MENINGKATKAN HASIL PRODUKSI TERHADAP KONSUMEN Syukrianti Mukhtar, Muchammad Nurif Abstrak. *Jurnal Sosial Humaniora*, *8*(2), 181–191.

Nugrahani, R. (2015). *Peran desain grafis pada label dan kemasan produk makanan umkm*. *IX*(2), 127–136.

Nugraheni, A., Syakur, A., & Setyawan, A. (2021). Teknologi Pengaduk Pada Produksi Dodol Nanas Madu DiKwt Berkah Tani Desa Belik Kabupaten Pemalang. *Jurnal Pengabdian Kepada Masyarakat ISSN : Tahun*, *1*(1), 28–31.

Perdani, C. G., Kusuma, H. A. W., & Kumalaningsih, S. (2017). Characteristic of Radish, Honey Pineapple, and Candlenut Powder Made with Foam Mat Drying Method. *Industria: Jurnal Teknologi Dan Manajemen Agroindustri*, *6*(2), 103–111. https://doi.org/10.21776/ub.industria.2017.006.02.7

Rahayu, W. E., Purwasih, R., & Hidayat, D. (2020). Pengaruh penambahan sari

nanas terhadap karakteristik kimia dan sensori minuman teh cascara. *Teknologi Pangan : Media Informasi Dan Komunikasi Ilmiah Teknologi Pertanian*, *11*(2), 144–151. https://doi.org/10.35891/tp.v11i2.1900

Rahmadhanti, D. I., Retnaningsih, N., & Arianti, Y. S. (2022). STRATEGI PEMASARAN AGROINDUSTRI OLAHAN NANAS MADU (Ananas sativus) DI KECAMATAN BELIK KABUPATEN PEMALANG. *Journal Social and Economic*, 73–86.

Sebayang, W. B. R., & Ritonga, F. (2021). Nutrisi Efektif Mempercepat Penyembuhan Luka Perineum pada Ibu Post Partum (Systematic Review) Effective Nutrition Accelerates Perineum Wound Healing on Mother Post Partum (Systematic Review). *Jurnal Kesehatan*, *12*, 330–336.

Siregar, C. N., & Rahmansyah, S. (2020). Community perception and participation to the implementation of Jabar Digital program in Ridwan Kamil'S instagram: A socio-digital study. *Journal Sosioteknologi ITB*, *18*(3), 369–380.

Tarumingkeng, R. C. (2025). Model Kano - kerangka kerja dalam manajemen mutu. In *Sustainability (Switzerland)*. RUDYCT e-PRESS.

Utami, S. S., & Kusumawati, B. (2017). Fakto-Faktor Yang Mempengaruhi Minat Penggunaan E-Money (Studi pada Mahasiswa STIE Ahmad Dahlan Jakarta). *Balance*, *XIV*(2), 29–41.

Walden, D. (1993). Center For Quality Of Management From the Chairman of the Editorial Board Introduction to Kano ' s Methods. *Higher Education in Europe*, *29*(1), 5–7. https://doi.org/10.1080/0379772040100167325 6

Yudha, E. P., & Rachmadina, V. (2023). Daya Saing Ekspor Komoditas Nanas Indonesia, Thailand Dan Filipina Di Negara Tujuan Ekspor Utama the Export Competitiveness of Pineapple Commodities Indonesia, Thailand and the Philippines in the Main Export Destination Countries. *Universitas Padjadjaran Jl, Ray a Ir. Soekarno Km. 21 Jatinangor-Sumedang*, *45363*, 414–433.