

An Analysis of Factors Influencing Consumers' Perception towards the Product Attributes of Sago Local Food Agro-Industry

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The development of product attributes is pursued by agro-industry craftsmen to maintain and promote the product position in the market as it is related to consumers' satisfaction of the consumer products. This research was aimed at 1) investigating the respondents' characteristics and 2) analysing the determinants of consumers' perception towards product attributes. The samples involved 40 respondents who were taken using accidental sampling. The research data was analysed by the principal component analysis (PCA) method. The result showed that Eigenvalue demonstrated the contribution of the determinants towards the observed variance values. There were seven (7) determinants of consumers' perception towards the product attributes of sago local food agro-industry, including product appearance, product preference, product promotion and transaction, product safety, product beauty, product reliability, and product suitability. The analysis result showed that the seven factors could explain all variance in the data by 66.99%.

Key words: *Product, consumer, agro-industry, PCA, sago local food.*

Introduction

Quality products will capture market share by attracting more consumers. Product attributes are factors that influence customer satisfaction. Satisfaction can give several benefits such as creating a harmonic relation between business actors, giving a good basis for repurchasing,

forming a sort of word-of-mouth recommendation, which benefits the agro-industry, and creating customer loyalty (Tjiptono, 2002). Customer satisfaction reflects the customers sense of the product's value, which is informed by their expectations and the products' performance in its use (Tjiptono, 2002). Customer satisfaction is a condition where customers' needs, wants, and expectations can be met, which results in repurchasing or viable loyalty (Band, 1991). The most important factor to create consumer satisfaction is the agent's performance, which usually means the agent's quality (Mowen, 1995). Musanto, 2004 in his research used four variables to represent customer satisfaction: reliability, response to and remedy of problems, sales experience, and convenience of acquisition. The results showed that sales experience is the biggest contributor to customer loyalty. Therefore, the company should improve its employees' ability by giving them training as well as briefing them in order to serve the customers better. Riorini and Widayati (2015) show that service quality has an indirect, positive and significant effect on customer loyalty through customer satisfaction; and the results of Jiang and Rosenbloom (2005) make clear that the quality of service, product quality, and price positively influence the satisfaction of the customer. The research of Suryana et al. (2013), shows that product quality, price, service quality, and location have a positive effect on customer satisfaction.

Most of the products on the market are products produced by the agro-industry. The agro-industry is one of the agribusiness subsystems that have a strategic position in the new paradigm as it serves to increase income distribution and growth enhancement. Agro-industry is an industry which uses agriculturally raw materials or processed products (Austin, 1992). The processing of agricultural products will produce value-added agricultural products that will increase economic growth in the agricultural sector.

Many businesses of local-resource-based processed food industry grow and develop as rural agro-industry businesses and provide employment. The activity of varying kinds of food through local processed food industries can be a strategy to raise the image of local food materials, which have long been considered inferior. It is very probable that food diversification efforts through agro-industries will develop local food to be part of people's food consumption. One of the developing agro-industries in Maluku is sago local food agro-industry. Sago is a type of horticultural plants used as a home-food source; an industrial raw material such as in food industry, glue industry, cosmetics, silage, textile, pharmacy, pesticide, and chemical industry; and as an energy source. Its side products can even be processed into fuel, mushroom medium, hardboard, or construction material (Kindangen and Malia, 2003), as well as biodegradable film (Polnaya et al, 2006).

Sago is processed by rural agro-industries into traditional and modern food products. The industries are established as a rural business to support home-economy (Timisela, 2006). The produced sago products are expected to be quality products with competitive prices and become

the key for agro-industry's success as they can give satisfaction to the consumers. Product users have different levels of satisfaction with a product. The agro-industry craftsmen need to monitor their current business environments and to adapt their business strategies in order to cultivate enthusiasm towards the products. The readiness of sago agro-industries to improve the business strategies and activities means producing value-added and quality sago products which have high value (Timisela et al, 2014). The description above shows that this research is important as it aims to find out the characteristics of respondents and analyse the determinants of consumer perceptions of product attributes.

Research Methodology

The research was conducted in Central Maluku regency and Ambon city in May-August 2019. The research locations were determined using purposive sampling by considering that the sale volumes of sago products were centred in those regions and they were indeed sago agro-industry centres. Meanwhile, the secondary data was gained from other sources, which provided related documents and information. The research data was analysed by the principal component analysis (PCA) method. To analyse the factors determining consumers' perception towards product attributes of sago local food agro-industry, several variables were used including: the taste (X1), the product's form (X2), being proper for consumption (X3), high quality (X4), the product's durability (X5), the product's completeness (X6), the low price (X7), the high price (X8), the suitability with standard food (X9), the product sustainability in the market (X10), the availability (X11), the clean storage (X12), the punctuality of product availability when demanded (X13), the need for public promotion (X14), the need for media for promotion (X15), the smoothness in buying and selling transactions (X16), good selling service (X17), safe packaging (X18), being labelled or branded (X19), unattractive packaging (X20), ease of carrying (X21), varieties in packaging sizes (X22), being clean and healthy (X23), the availability in various sizes and completed with nutrition compositions (X24), being safe to consume (X25), and the similarity of products' performance to other products (X26). In measuring the variables, ordinal scales were used to explain whether an object was better or worse in certain respects. The measurement scale used was Likert scale with five (5) scores representing: strongly agree (5), agree (4), uncertain (3), disagree (2), and strongly disagree (1). The research samples included 40 respondents, which were taken using accidental sampling, meaning that the consumers (respondents) were accidentally met in the research locations while doing transactions.

The research instrument was tested for validity and reliability. Analysis of the validity and reliability testing of the instrument is used to test the level of validity and reliability of the measuring instruments used. The results of testing the validity of the question items on the questionnaire for each variable with $r > 0.3$ (Sugiono, 2014) show that all items have a greater correlation value. This means that all question items are valid. The validity test was aimed at

examining how valid or invalid an instrument (questionnaire item) was by finding the correlation between each question item and the total score of questions. This test was conducted using SPSS program by finding the correlation coefficient value (r) of each question to be compared with r correlation table. If $r_{\text{counting}} > r_{\text{table}}$, the question will be valid. On the condition that: 1) If r_{counting} is positive, and $r_{\text{counting}} > r_{\text{table}}$ ($\alpha = 0,05$), the variable will be valid; 2) If r_{counting} is negative, and $r_{\text{counting}} < r_{\text{table}}$ ($\alpha = 0,05$), the variable will not be valid (Santoso, 2000); 3) According to Sugiyono (2007) and Masrun (1979), if $r_{\text{counting}} \geq 0,3$, the variable will be indicated to be valid.

The reliability test was conducted to test the trustworthiness of the instruments. To test a variable or item's reliability, the reliability coefficient value (alpha) was taken into account. The test was conducted using SPSS. If $r_{\text{Cronbach alpha}} > 0,6$ and the values are positive, the measured variable will be reliable. *Cronbach Alpha* reflects the internal consistency of a measuring instrument by comparing alpha value with r_{tabel} value.

The obtained variables and data were analysed using factor analysis as follows.

$$Y = A_{i1}F_1 + A_{i2}F_2 + A_{i3}F_3 + \dots + A_{im}F_m + V_iU_i$$
$$F_i = W_{i1}X_1 + W_{i2}X_2 + \dots + W_{ik}X_k$$

Notes:

- Y = consumers' perception (latent variable or unmeasured variable)
 A_{ij} = double regression coefficient standardized from variable (i) on *common factor* j.
 F_i = *common factor*
 U_i = unique factor for variable-i
 V_i = double regression coefficient standardized from variable (i) on unique factor of variable-i
 m = the number of *common factor* F_i = estimation of factor-i
 W_i = factor value coefficient X_i = variable-i,
 k = the number of variables, 26 variables

In relation to factor analysis, the tests included the following tests.

- Barlett's test of Sphericity* was used to examine whether the variables in the sample correlated.
- Kaiser Meyer Olkin (KMO)* was used to investigate the sample sufficiency or to measure sample eligibility; the factor analysis would be considered eligible if KMO value > 0.5 .
- A Measure of Sampling Adequacy (MSA)* was used to measure the correlation degree among variables with the criterion MSA value > 0.5

- d. Determining the model's accuracy. This step aimed at investigating whether the model could explain the existing phenomenon well. It is conducted by figuring out the residual value between the observed correlation and the reproduced correlation.
- e. Determining the number of factors. It was based on the Eigenvalue of each emerging factor. The selected core factors were those having Eigenvalue > 1 .
- f. Factor rotation. Factor rotation was conducted to make it easier to interpret which variables were attached in a factor. This is because several variables occasionally had a high correlation with more than one factor or some factor's loading of the variables were lower than the lowest of those determined. This research used *varimax* rotation. It was an orthogonal method of factor rotation, which minimized the number of variables with a high loading on a factor.

Factor interpretation: Factor interpretation was conducted by grouping the variables with high factor loading into the factor. In this research the minimal *factor loading* was 0.55.

Results and Discussion

Respondents' Profiles

According to Kotler (2000), consumers are all individuals and households that purchase or get products or services for personal consumption; anyone who uses products and/or services available to the society for personal needs, family, other people, or other creatures and the products and/or services are not for sale. Consumers are related to behaviours, including individuals, groups or organizations' behaviours as well as the processes done to select, determine, attain, consume, and stop the use of products, services, experiences, or ideas to satisfy the needs and impact of those processes towards the consumers and society (Hawkins et al, 1992).

The profiles of sago product consumers are presented in Figure 1. The inclusion of demographic interaction variables can increase model accuracy by including the personal characteristics of the consumer, which often play an important role in determining choice behaviour (Hu et al, 2009). The interaction variables were created by multiplying the original product attribute variables by demographic variables (Chunrong and Norton, 2003). It can be seen that the ages of consumers who did the highest purchase and consumption of the sago processed products ranged from 25 to be 34 years old. However, from the age distribution, it showed that almost all ages needed sago processed food for household consumption. The majority of consumers' ages were 25-54, including the youth and the elderly. The convenience to consume local food at such ages is highly recommended, meaning that they should go back to local food and increase the consumption of local food for the family. It was necessary to introduce local food products to young generations so that local food will not be neglected.



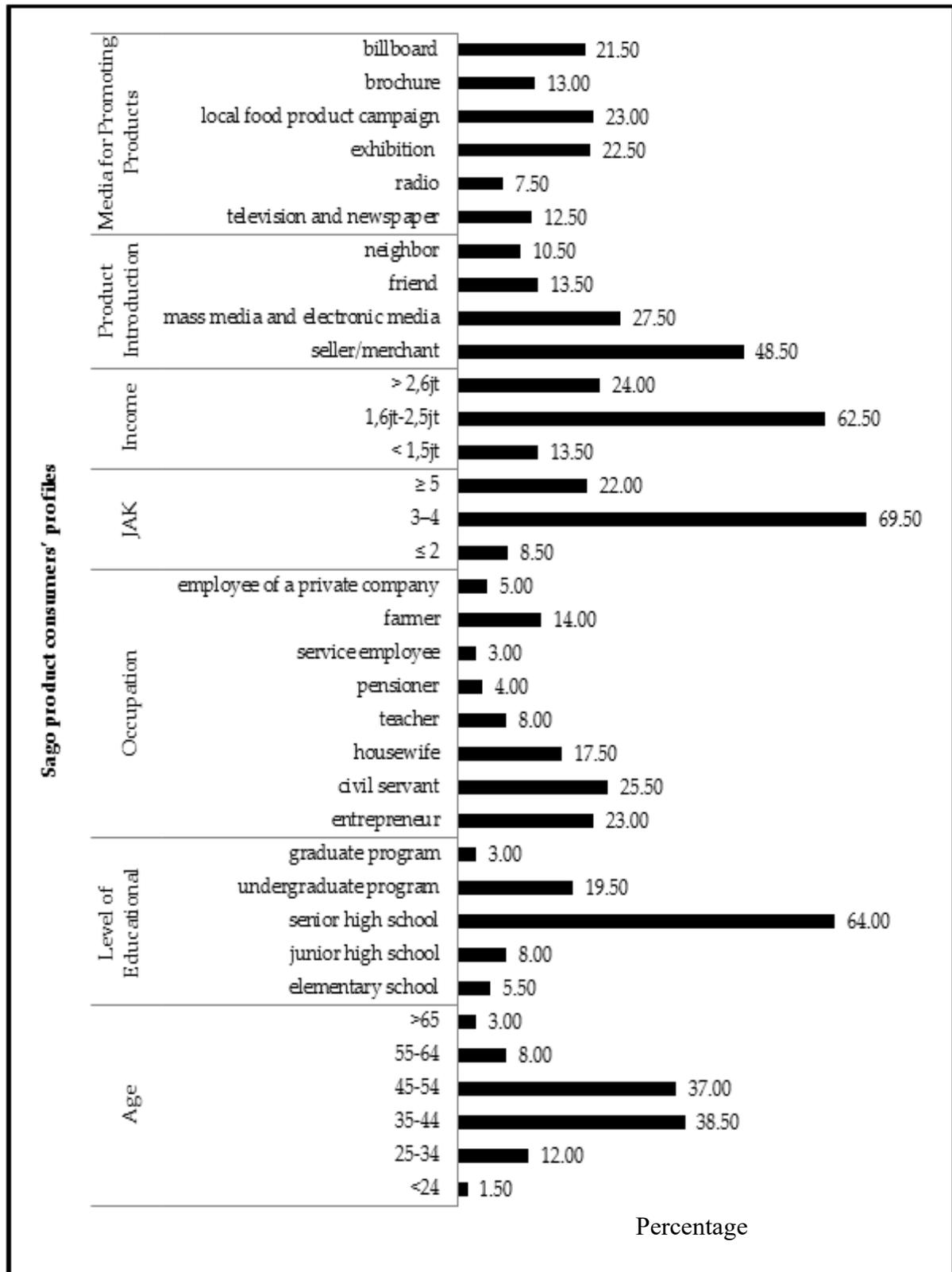
Educational levels also influenced preference for a particular product for consumption. Respondents in senior high school consumed sago more frequently. It was because the higher the educational level, the wider the knowledge of local food's importance for personal and family consumptions.

In terms of occupation, most of the consumers were civil servants; those were 41.50%. In the research locations, the citizens are heterogeneous. The occupations also vary with civil servants, entrepreneurs, an employee of a private company, farmers, fishermen, service employees, housewives, etc. Housewives were appointed as respondents as almost every day they went to the market and always bought some products. Besides, they did not produce any products so they really needed sago products as the side dish for rice and other kinds of food.

The number of respondents' family members was similar in all supply-chain actors, ranging from three to five persons. Consumers' incomes ranged from 1.6 million Rupiahs to 2.5 million Rupiahs per month. The respondents were classified between the middle to low economic levels. Sago products were known better by consumers through the sellers. It was easier for consumers to recognize products through the sellers rather than other media.

Most sago products were not informed or promoted widely to be public. Thus, many people had not understood that products have been modified into modern products. It is really necessary to create a medium to introduce the products of sago local food widely in the local, national, or international levels. Most consumers stated that the required media to introduce sago local food products were television, newspapers, magazines, promotions, and campaigns. The products should particularly be introduced to children as they had not been acquainted with sago and did not consume it.

Figure 1. Sago Product Consumers' Profiles



Results of Validity and Reliability Tests

Based on the test, all given question items were valid as the validity value was higher than the critical value; that was 0.3 (Table 1). From the reliability test, it was found out that the *Alpha Cronbach* value ≥ 0.7 . This means that the factor measurement gave the consistent result needed for the following analyses. These results are the same as that of Shkeer and Awang (2019), suggesting that Cronbach's Alpha test was higher than 0.7 for the entire constructs' items, which means that these items are all reliable. This study found a valid and reliable instrument for measuring the effectiveness of marketing IS components in the decision-making process.

Table 1: Validity Test Result

Variable	Cronbach α	Validity	Variable	Cronbach α	Validity
X1	0.832	0.526	X14	0.838	0.395
X2	0.833	0.486	X15	0.843	0.321
X3	0.833	0.485	X16	0.841	0.329
X4	0.835	0.422	X17	0.834	0.425
X5	0.836	0.401	X18	0.841	0.384
X6	0.839	0.369	X19	0.829	0.577
X7	0.847	0.370	X20	0.829	0.547
X8	0.836	0.415	X21	0.835	0.416
X9	0.845	0.335	X22	0.831	0.508
X10	0.831	0.517	X23	0.833	0.544
X11	0.835	0.413	X24	0.836	0.410
X12	0.829	0.561	X25	0.831	0.494
X13	0.833	0.490	X26	0.845	0.356

Source: Primary Data Processing, 2019

Factors Determining Consumers' Perception towards Product Attributes of Sago Local Food Agro-Industry

The focus of this research was to analyse the factors determining consumers' perception towards product attributes of sago products using factor analysis approach (*Principle Component Analysis*).

Making Correlation Matrix

Based on the test conducted in this step, the result appeared as follows:

- a. *Bartlett Test of Sphericity*. The value was 2628.035 with significance of 0.000. This means that there is a correlation among variables (significance $0.00 < 0.05$).
- b. *Kaiser-Meyer-Olkin (KMO)* test. The value was 0.692 which was more than 0.5. Therefore, all variables could be processed further.
- c. *Measure of Sampling Adequacy (MSA)* test. This test was done to measure the correlation degree among variables, in which each variable was analysed to find out which variables could be processed and which ones should be eliminated. In Table 2, it can be seen that all variables had MSA value > 0.5 . Thus, all of them met the requirements to be used in the following analyses.

Table 2: MSA Values of Each Variable on *Anti-image Matrices*

Variable	MSA value	Minimum Standard Value	Variable	MSA value	Minimum Standard Value
X1	7.14	0,5	X14	5.30	0.5
X2	7.31	0,5	X15	5.34	0.5
X3	6.91	0.5	X16	5.65	0.5
X4	7.39	0.5	X17	7.60	0.5
X5	7.43	0.5	X18	5.18	0.5
X6	6.90	0.5	X19	8.26	0.5
X7	5.39	0.5	X20	7.20	0.5
X8	5.93	0.5	X21	6.54	0.5
X9	5.05	0.5	X22	6.98	0.5
X10	8.81	0.5	X23	6.97	0.5
X11	7.79	0.5	X24	7.05	0.5
X12	8.05	0.5	X25	6.10	0.5
X13	7.98	0.5	X26	7.24	0.5

Source: Primary Data Processing, 2019

The process of determining the suitability of the factor analysis model showed that the residual percentage was 40.0% with an absolute value > 0.05 . It indicated that the model's suitability was 60% with 5% deviation, or in other words, the model could be accepted with 60% suitability.

Determining the Number of Factors

The factors selected for further analysis were those which have Eigenvalue ≥ 1 . Under such a limitation, there were 26 factors determining consumers' perception of sago product attributes. Eigenvalue represented how the value of variance contributed to the whole variance values observed. The analysis result showed that there were seven (7) factors giving Eigenvalue > 1 .

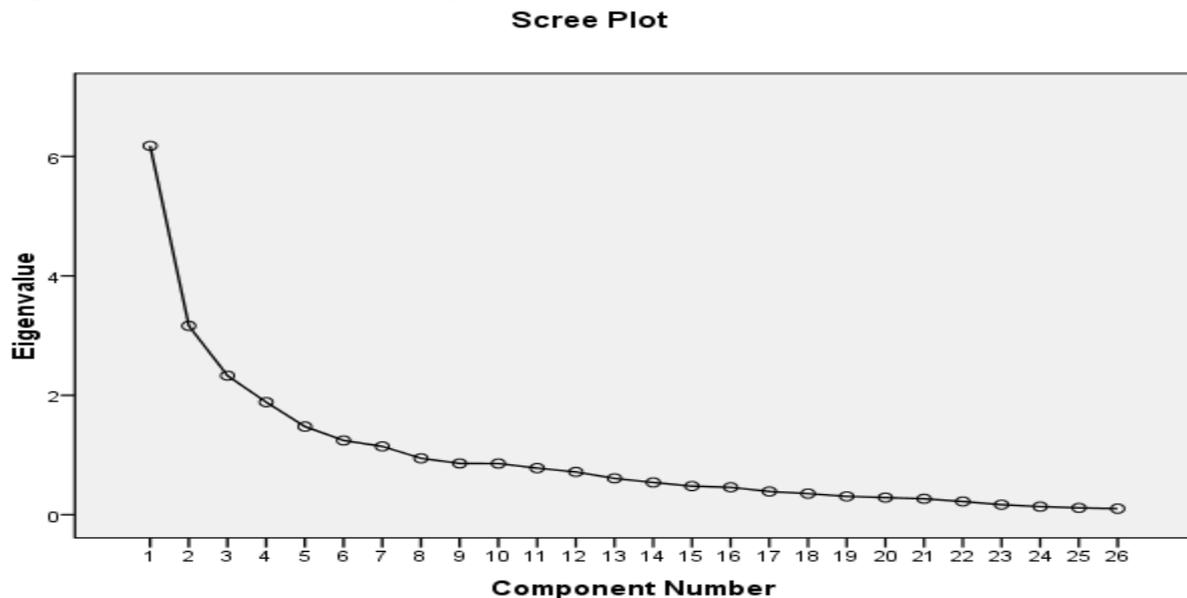
The seven factors could to explain all variances in the data for 66.99% (Table 3). The Eigenvalue measurement result of the twenty-six (26) variables are presented in Figure 1.

Table 3: Eigenvalue, Variance Percentage and Variance Cumulative Percentage of the Seven Factors

Factor	Eigenvalue	% Variance	% Variance Cumulative
1	6.177	23.759	23.759
2	3.163	12.165	35.923
3	2.329	8.956	44.879
4	1.885	7.251	52.130
5	1.476	5.677	57.807
6	1.243	4.780	62.587
7	1.144	4.399	66.986

Source: Primary Data Processing, 2019

Figure 1. Scree Plot of Factors' Eigenvalues



Factor Rotation

The factor matrix formed before rotation still demonstrated an indistinct result which was difficult to interpret. The problem was solved by rotating factors to make it easier for the whole factors analysed in the model to be explained. This research used *Varimax* rotation as it was easier to analyse it theoretically. After the rotation, it showed that the 26 variables were distributed in seven (7) factors. Those variables represented the factor in determining consumers' perception of sago product attributes (Table 4).

Table 4: Factor Matrix with *Varimax* Rotation

No.	Variable	Factor						
		1	2	3	4	5	6	7
1	X1	0.173	0.182	0.031	0.235	0.706	0.147	-0.098
2	X2	0.382	-0.076	0.015	0.241	0.717	0.009	-0.034
3	X3	-0.12	0.17	0.17	0.129	0.637	0.485	0.135
4	X4	0.178	0.199	-0.093	0.142	0.612	-0.058	0.284
5	X5	-0.084	0.714	0.299	0.063	0.004	0.35	0.084
6	X6	-0.012	0.664	0.067	-0.233	0.269	0.069	0.064
7	X7	0.301	-0.396	-0.119	-0.175	0.081	0.544	-0.116
8	X8	0.105	0.058	0.113	0.058	0.17	0.803	-0.087
9	X9	0.049	0.831	-0.078	0.02	0.101	-0.111	-0.096
10	X10	0.762	-0.098	-0.016	0.239	0.199	0.105	0.135
11	X11	0.665	-0.031	-0.135	-0.142	0.267	0.391	0.016
12	X12	0.353	0.228	0.048	0.103	0.207	0.473	0.411
13	X13	0.693	0.067	-0.027	0.076	0.06	0.211	0.311
14	X14	0.213	-0.059	0.596	0.027	0.13	0.139	-0.251
15	X15	0.004	0.098	0.791	-0.05	-0.084	-0.199	0.089
16	X16	0.046	0.035	0.736	-0.167	-0.014	0.188	0.236
17	X17	0.404	-0.219	-0.081	0.539	0.343	-0.042	0.146
18	X18	-0.142	0.06	0.648	0.117	-0.046	0.252	-0.271
19	X19	0.319	0.381	0.529	0.118	0.233	-0.03	0.243
20	X20	0.234	0.026	-0.015	0.829	0.312	0.026	0.036
21	X21	-0.027	0.107	-0.043	0.877	0.147	0.123	0.135
22	X22	0.545	0.052	0.275	0.426	0.168	-0.128	-0.121
No.	Variable	Factor						
		1	2	3	4	5	6	7
23	X23	0.768	0.162	0.308	0.097	0.049	0.057	-0.087
24	X24	0.23	0.254	0.227	0.166	-0.191	0.585	0.178
25	X25	0.18	0.658	0.061	0.457	-0.024	0.116	-0.115
26	X26	0.085	-0.066	0.004	0.096	0.057	-0.003	0.703

Source: Primary Data Processing, 2019

The analysis was based on *Varimax* rotation procedures to minimize the number of variables having high loading to their factor so the interpretation could be done with ease. The variables in a single factor were determined by finding the loading value. If the variable has been loading value > 0.5 , it will be able to explain the factor.

Factor Analysis Result

After the twenty-six (26) initial factors were formed, they were analysed until only seven (7) factors remained with all their Eigenvalue, variance percentage, variables that form factors, and loading value.

Table 5: Factor Analysis Result of Consumers' Perception towards Sago Product Attributes

Factor	Eigenvalue	Total Cumulative Variance (%)	Forming Variables	Loading Value
A1	6.177	23.759	X23	0.768
			X10	0.762
			X13	0.693
			X11	0.665
A2	3.163	12.165	X9	0.831
			X5	0.714
			X6	0.664
			X25	0.658
A3	2.329	8.956	X15	0.791
			X16	0.736
			X18	0.648
			X14	0.596
A4	1.885	7.251	X21	0.877
			X20	0.829
A5	1.476	5.677	X2	0.717
			X1	0.706
			X3	0.637
			X4	0.612
A6	1.243	4.780	X8	0.803
			X24	0.585
A7	1.144	4.399	X26	0.703

Source: Primary Data Processing, 2019

The loading values were put through an order from the highest to the lowest with the criterion > 0.5 , as presented in Table 5. In this research, a number of variables were eliminated and not included in the model because they did not exceed 0.55; they were X7, X12, X17, X19, and X22. The five variables had an insignificant role among the factors in determining consumers' perception of sago product attributes. The factors determining consumers' perception of sago product attributes were A1, A2, A3, A4, A5, A6, and A7.

Factor Interpretation

A company is expected to maintain or even improve their products' quality (Ariastuti et al, 2006). This can be initiated by improving the variables that have not been considered important in determining the customers' loyalty without neglecting other very important variables so that the quality meets the customers' expectations, and their loyalty will eventually rise up. This is supported by the research of Risnawati et al. (2019), who found that customer satisfaction has a positive and significant impact on customer loyalty at the company's freight forwarder. This shows that with higher customer satisfaction, there is an increase customer loyalty.

Satisfaction is an after-purchase evaluation in which the alternative exceeds or is at least equal to the customers' expectations, whereas dissatisfaction emerges when the result does not meet the expectations. Consumers' loyalty follows up customers' satisfaction in using the products given by the company. Product attributes are the factor to increase customer loyalty either directly or through their satisfaction. Product attributes can influence customer satisfaction so that they willingly accept the products and repurchase (Oksana and Andrius, 2005). Consumers repurchase sago products because there are many suitable product attributes such as price, packaging, labels, quality and a variety of product designs.

Information about consumer preferences can be distilled by breaking products down into their component attributes. The quantitative measurement of each attribute function in generating overall consumer use for the product is essential to designing products that maximize consumer satisfaction (Green and Srinivasan, 1990). Product attributes are everything attributed to a product or parts of that product. According to Guntur (2010), product attributes encompass prices, designs, colours, qualities, and brands. Improving a product involves applying the benefits given by the product. The decision about product attributes is really important in influencing consumers' reactions towards a product. According to Engel et al. (1994), the factors which affect consumers' decisions to buy a product are individual, psychological, and environmental. Individual factors include consumer resources, motivation and involvement, knowledge, attitudes, personality, lifestyle and demographics. Environmental factors include culture, social class, personal influence, family and situation. Psychological factors include processes such as information processing, learning, changing attitudes / behaviours. These three factors strongly support consumers' decision to buy a variety of processed sago products.

The condition of dynamic product marketing has made market actors, and producers compete anytime through the television, radio, newspaper, magazine, or the internet. We see the continuous and unceasing launch of new and newer products. The offered products are varied in their attributes. Of course, it makes consumers more unhindered in deciding their choice. Meanwhile, it makes the producers work harder to maintain their customers' loyalty (Dimiyati, 2012). In fulfilling their needs and wants, consumers will purchase a product with certain

attributes. If the chosen product can satisfy their needs and wants, the consumers will have a deep impression of the product. Consumers will choose a product that has given them satisfaction so that the repurchasing will occur. If the consumers are satisfied by a product, they will buy it continuously, use it, and inform others about the product's strengths based on their experiences. This is supported by the research of Razak et al. (2016) who state that product quality improvement and competitive price could increase customer satisfaction. When the customer is satisfied with a reliable toothpaste, for example, that is of a standardized quality, and has with an affordable price, customer satisfaction can increase, as it appears in the interest of the buyers to re-purchase over and over again.

Consumers purchase products to be consumed and satisfy themselves. There were various kinds of sago products that were consumed; eight of which were *lempeng* sago, *bagea* sago, *grated* sago, *macron* sago, *bangket* sago, *sika* sago, sago snack, and *mutiara* (pearl) sago. The eight products were produced by rural agro-industries, which were simply and independently managed. The sago craftsmen were really concerned about the products' qualities so that when they were consumed, the customers did not complain and/or dislike it (Timisela et al, 2017). The sago product evaluation was conducted by studying the marketing attributes which were elaborated in 26 attributes of 7 factors. The seven factors are explained as product appearance (A1): being clean and healthy (X23), the sustainability of product in the market (X10), the punctuality of product availability when demanded (X13), the availability (X11), product preference (A2), product size (X9), product durability (X5), product completeness (X6), being safe to consume (X25), the promotion and transaction (A3), the need for media for promotion (X15), the smoothness of buying and selling transactions (X16), the safe packaging (X18), the need for public promotion (X14), product safety (A4), the ease for carrying (X21), the unattractive packaging (X20), product beauty (A5), product form and colour (X2), the taste (X1), being proper for consumption (X3), being high quality (X4), product reliability (A6), high price (X8), availability in various sizes and completed with nutrition compositions (X24), the product suitability (A7), the similarity of products' appearance to other products (X26).

Factor A1 (product appearance) was the dominant factor for consumers when they bought the products since it had the highest Eigenvalue of 6,177. This factor could describe variance to total variance of 23.76 %, which was the highest variance value. The variables in this factor were being clean and healthy (X23), the availability of continued product in the market (X10), the punctuality of product availability when demanded (X13), and availability (X11). From the presented loading values, it can be seen that X23 (being clean and healthy) was the main variable consumers used to decide whether they would buy the product with a loading value of 0.768. It means that being clean and healthy is important and influences consumers to spend their money on the products. Consumers were also twice as likely to choose jelly products that advertised qualified health claims and were 2.1 times more likely to select juice products with health claims than products without such claims (Mohebalian et al, 2013).

Factor A2 (product preference) was the second factor of marketing attribute evaluation with Eigenvalue of 3,163. The factor described the variance to the total variance of 12.17 %. The variables that form this factor were the product size (X9), product durability (X5), product completeness (X6), and were safe to consume (X25) with loading value of 0.831. It means that consumers consider the product's size when deciding whether they will buy it. Products' sizes will be different depending upon the types.

Factor A3 (product promotion and transaction) was the third factor of marketing attribute evaluation with Eigenvalue 2,329. The factor could describe the variance to the total variance of 8.96 %. The variables forming this factor were the need for media for promotion (X15), the smoothness of buying and selling transactions (X16), safe packaging (X18), and the need for public promotion (X14). The forming variable counted was X15 (the need for media for promotion) with a loading value of 0.791. Product promotion is very important to introduce the product. Media for promotion is needed to socialize the varieties of sago products available in the market. There are also various kinds of media that can be used by sago agro-industry actors to spread information related to their products.

Factor A4 (product safety) was the fourth factor of marketing attribute evaluation with Eigenvalue of 1,885. This factor described the variance to the total variance of 7.25 %. The variables that form this factor were ease of carrying (X21) and unattractive packaging (X20). The forming variable counted was X21 (ease of carrying) with the loading value of 0.877. The sago products bought by consumers were consumed by themselves or their families. Therefore, the products must be practical, meaning that they are easily obtained and carried.

Factor A5 (product beauty) was the fifth factor of marketing attribute evaluation with Eigenvalue of 1.476. This factor described variance to the total variance of 5.68 %. The variables forming A5 were the product's form and colour (X2), taste (X1), proper for consumption (X3), and high quality (X4). The forming variable counted was X2 (product's form and colour) with the loading value of 0.717. Sago products usually have quite unique forms and attractive colours. Consumers sometimes want such kinds of products, particularly children.

Factor A6 (product reliability) was the sixth factor of marketing attribute evaluation with Eigenvalue of 1.243. This factor described the variance to the total variance of 4.78 %. The variables forming this factor were the high price (X8), as well as the availability in various sizes and completed with nutrition compositions (X24). The forming variable that counted was X8 (high price) with the loading value of 0.803. The selling prices of sago products at the market were relatively high due to other complementary materials. When the price of the raw material is not steady and the prices of the complementary materials fluctuate, the impact on the sago product sale will be huge. The consumers will find difficulty purchasing sago products at high prices so that they may choose other food products.

Factor A7 (product suitability) was the seventh factor of marketing attribute evaluation with Eigenvalue of 1.144. The factor described the variance with the total variance of 4.4 %. The variable that forms this factor was the similarity of the products' appearances to other products (X26). This variable was counted with loading value of 0.703. The appearance of sago products that are similar to other products will make it difficult for customers to choose. They will usually compare those products even though it is hard to distinguish them.

Conclusion

The identified characteristics of sago consumers included age, educational level, occupation, number of family members, income, product introduction, and media for promotion to advertise the products totally.

The determinants of consumers' perception towards the marketing of the sago processed products consisted of seven factors, including product appearance, product preference, product promotion and transaction, product safety, product beauty, product reliability, and product suitability.

Twenty-on out of 26 identified variables represented each determinant of consumers' perception towards sago product attributes. Those variables were being clean and healthy (X23), the sustainability of product in the market (X10), the punctuality of product availability when demanded (X13), availability (X11), product size (X9), product durability (X5), product completeness (X6), and being safe to consume (X25), the need for media for promotion (X15), the smoothness of buying and selling transactions (X16), the safe packaging (X18), the need for public promotion (X14), the ease of carrying (X21), the unattractive packaging (X20), the product's form and colour (X2), the taste (X1), being proper for consumption (X3), high quality (X4), high price (X8), being available in various sizes and completed with nutrition compositions (X24), and the similarity of the product's appearance to other products (X26).



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