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Consumers Perception of Arak Ego Pala

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A B S T R A C T

Nowadays, Balinese liquor called "Arak" has been traded conventionally and on an industrial scale. Balinese Arak can be developed into a product that has a higher value by combining it with local commodities such as spices, that bring a touch characteristic of local products. Arak EGO Pala (*Myristica fragrans* Houtt) is one of the mainstay commodities in Indonesia, especially Bali. The unique aroma and taste of nutmeg combined with the taste of Balinese liquor "Arak" can be a new innovation in a product development to supporting Balinese tourism which can provide new experiences for connoisseurs of traditional local spirit. Arak EGO is one of the brands that developed Arak with Arak EGO Pala flavour. The purpose of this research were to: (1) identify the liquor attributes that are considered important by consumers (2) determine the level of consumer perception of Arak EGO Pala and (3) determine the attributes that need to get priority to improve their performance based on consumer assessment. The research conducted in Badung Regency which consisted of a survey consisted of several stages, namely initial initiation, data collection, tabulation and data analysis. Data obtained using questionnaires and interviews. Respondents in this study were as many as 200 people. The number of respondents was obtained using the Lemeshow method. The data obtained was tabulated using Microsoft Excel, then analyzed using the Importance Performance Analysis (IPA) method. Based on the research results it is known that there are 5 out of 12 attributes that are considered important by consumers. Consumer perceptions of Arak EGO Pala are good with a percentage of Tki of 90.32%. Attributes that need to be improved are mouthfeel, primary taste, aftertaste price, and nasal. Overall, Arak EGO Pala is well received by both domestic and foreign consumers. This research has provided positive information for development and sustainability of Balinese liquor "Arak" as a superior local product.

Introduction

Balinese liquor called "Arak" is one of the traditional beverage made from old generation to younger generation. As a historical value, arak was used as a means of worship called *Bhutayadnya*, but today, arak has become a popular alcoholic beverage which all people can drink and enjoy. Most of

people in Karangasem and Buleleng regencies support their families by producing arak which is produced in a traditional way. Arak in those areas sold at Rp. 20,000.00 to Rp. 35,000.00 per liter. When it compared with alcoholic beverages type C (whiskey, liquor, tequila, etc) produced commercially in Bali, arak has a very low selling price. Arak usually consumed neat, but some people like mixing them with the, juice or tonic water. Widuri (2018) Arak Bali can be used to made a cocktail such as Mojito drinks. Arak Bali has almost the same content as rum both in terms of alcohol content, aroma and color.

Arak is not only produced traditionally, but has been produced on an industrial scale. Arak produced by various industries and at this time are still not much developed. One way to increase the value of a product is by product innovation. Innovation is a new idea, practice, process, to make a new product (Cooper, 1998). Product innovation is a way of increasing value and as a key of the successful business operation that can bring a company a competitive advantage and become a market leader (Henard and Szymanski, 2001).

Governor of Bali Wayan Koster hopes that traditional Balinese beverage arak, "tuak" and "brem" become legal businesses to produce and develop, in accordance with Presidential Regulation (Perpres) Number 10 of 2021 concerning business and investment sectors. The Governor of Bali Koster (2021) stated that based on data regarding the revenue of the Directorate General of Customs and Excise, Ministry of Finance for 2019 when the COVID-19 pandemic had not yet hit Bali. At that time, the excise revenue for the alcoholic beverage industry was IDR 7.06 trillion and 80% of circulation in Bali or IDR 5.4 trillion. However, of this circulation, alcoholic beverages in Bali mostly by imported products (92%), only 8% are produced in Bali. Koster, Wayan "Rp. 5 Trillion Excise for Alcoholic Beverages from Bali, 2019 data; Thus it is very clear that Bali has lost its economic potential derived from alcoholic beverages.", *Kanal Bali,* March 2, 2021.

Bali is one of the provinces in Indonesia that optimally produces various plantation products, including coffee and Arak EGO Pala. Based on data from the Directorate General of Plantations 2021, Arak EGO Pala production data in Bali for the last 3 years has started to show an increase in production from 40 tons in 2019 to 73 tons in 2021. Likewise with the coffee commodity, coffee production has increased from year to year from 15,250 tons in 2019 to 15,753 tons in 2021 (BPS, 2021).

Nutmeg (*Myristica fragrans houtt*) contains essential oils found in fruit, mace and leaves. Arak EGO Pala oil is widely used for the pharmaceutical, perfume and cosmetic industries. On the Arak EGO Pala there is a layer resembling a seed coat in the form of a bright red net which is commonly called aril, fuli or flower. Fuli is used as a flavour enhancer in various types of meat-based products, pickles, sauces and soups, as well as to neutralize the unpleasant odor of boiled cabbage (Lewis in Librianto, 2004). Flavonoid components that function as flavour compounds in Arak EGO Pala and mace include myristicin, elemicin and isoelemicin which are aromatic and can relieve stress (Sumarno and Lukas, 2021). With adequate resources, Arak can be innovated using a mixture of local ingredients can be an alternative for developing Arak Bali. Product innovation by utilizing local products is its own characteristic and attracts consumers to products by considering aspects of local wisdom.

One of the Arak that has been modified with local products is Arak EGO Pala produced by Papila's Coffee in collaboration with lecturers from the Faculty of Agricultural Technology, Udayana University. Arak EGO Pala is one of the Arak from Bali which has been modified with the addition of fuli as a flavour using the maceration method.

The famous Coffee Shop in Klungkung Regency sees an opportunity that arak can be developed into a product that has a higher value by combining it with original Balinese products, namely Arak EGO Pala with the concept of promoting a Balinese taste.

The purposes of this research were to determine the level of consumer perception of Arak EGO Pala, determine attributes of liquor that are considered important by consumers, and determine the attributes that need to be prioritized for improved performance based on consumer assessment.

Materials and Methods

The tools and materials used in this research are Arak EGO Pala, papercup, work stationery, questionnaires, cell phones and cameras as tools for documentation of the entire research process. There are several stages of research in this research. A first stage was Preliminary Stage. This research was conducted in August - October 2022, carried out in Badung Regency. It has many tourist supporting facilities, especially places that allow the trading of alcoholic beverages. The mapping of the research locations was carried out in the Kuta, Seminyak, Petitenget, Canggu and Kerobokan areas.

The second is to determine the objectives and limitations of the research based on the conditions that occur in the field and then a literature study is carried out to support the research to be carried out.

The data needed in this study are primary data and secondary data. Primary data was obtained through two stages, namely interviews and questionnaires to the respondents. The population of this study is all people (Balinese residents, immigrants, national and international tourists) who consume alcoholic beverages, especially *liquor*, at least 21 years age in the Province of Bali whose number is unknown. The sampling technique used is a *non-probability sampling technique*. The method used is the *Accidental Sampling*. Determining the number of samples using the Lemeshow method is one method that can be used to calculate the number of samples with a large population and the exact number is not known (Lemeshow *et al.*, 1990). The following is the Lemeshow formula:

$$n = \frac{z_{1-\frac{\alpha}{2}} P(1-P)}{d^2}$$

Information

n = Number of samples

z = z score at 95% confidence = 1.96

p = maximum estimate = 0.5

d = alpha (0.10) or sampling error = 10%

Based on the calculation results obtained a total sample of 96, which is the minimum number of samples used. The sample used in this study was 200 respondents. The data collection process was carried out by conducting sensory tests and visual observations of the quality attributes of Arak EGO Pala assisted by questionnaires provided in 2 types, namely digital questionnaires and questionnaires in physical form (paper). Determining the level of interest and preference (satisfaction) of consumers is measured by the Likert level 1 to 5 (Nopembereni and Sugiyanto, 2017).

The data obtained were then tabulated using Microsoft Excel and analyzed descriptively**.** The analysis used in this study is Importance Performance Analysis (IPA), this method is used to determine the level of importance based on the product attributes tested and the level of satisfaction of respondents to the product attributes tested according to the point of view and benefits for respondents. The data were obtained by comparing the attribute values that were considered important by the respondents with the respondent's value for Arak EGO Pala. Secondary data was obtained from other parties in the form of articles, scientific journals, and books.

Results and Discussion

Liquor Attributes

Through the results of a literature study, elaboration, preliminary research and elimination, the following research attributes were determined: (1) beverage name (brand), (2) composition information, (3) the

colour of the liquor, (4) Aroma, (5) primary taste, (6) mouth feel, (7) nasal, (8) aftertaste, (9) volume, (10) alcohol percentage, (11) packaging form, (12) label design, (13) Price, (14) Product origin and (15) product availability. The attributes presented in Table 1. These attributes were then lowered into questions in the questionnaire to find the level of importance and performance.

Visual perceptions are the first information that we obtain from the product (Carrasco, 2011). A well-managed brand identity may result in positive perceptions, attitudes and behaviours of different stakeholders. For instance, from the point of view of consumers, the creation of a unique, coherent and distinctive identity can add value to the company's products (Coleman *et al.*, 2011). Brand identity shown in a product label and a packaging design in order to make a valuable product.

The visual appearance reveals much about the quality, style, condition and even possible defects of the product. In beers and wines, the utility of the visual perception is mainly focused on the colour evaluation (Carrasco, 2011). The olfactory perception is based on chemical interactions between aromatic volatile compounds and the olfactory receptors located in the nasal cavity. In the olfactory receptors there are about 10 to 20 million of specialized cells, which respond to the aromatic compounds. The receptors send signals to the corresponding halves of the olfactory bulb, located directly above, at the base of the brain (Jackson, 2002).

Gustatory perceptions are the main attributes to determine alcoholic beverage quality. These perceptions, detected once the product has been introduced into the mouth, are produced by a pair of chemoreceptors: the specialized receptor neurons and the free nerve endings scattered throughout the oral cavity. The first, grouped in cavities within taste buds, are responsible of generating the perceptions sweet, sour, bitter and salty. The second generate the mouth-feel (tactile) perceptions of astringency, touch, burning, viscosity, temperature, body, prickling and pain (Carpenter *et al.*, 2000). The evaluation of cocktails uses a combination of the theories of Ristiyana *et al.*, (2000) and Katsigris and Thomas (2012). There are 6 product attributes that are good indicators of cocktail and as an evaluation of the cocktail. According to Ristiyana *et al.*, (2000) in his journal which states that cocktails have four product attributes, namely taste, aroma, color, texture.

Reliability and Validity Test

Based on reliability analysis about consumer perception and performance Arak EGO Pala shown value of coefficient alpha (α) for each has 0.825 and 0.859 so that means the question items in the questionnaire are reliable because they have greater than 0.60 (Ghozali, 2005). This means that every statement contained in the questionnaire is considered valid for use (Kerlinger and Lee, 2000). Based on that, 11 out of 15 reliable and valid attributes were tested to measure consumer satisfaction in the study area. The result of validity test presented in Table 2.

Respondents Characteristic

Characteristics of Respondents Based on Age

Data of the research showed that the highest number of respondents who consume alcoholic beverages especially type C was age group of 21-30 years of age with a total of 79% from total respondents, for the age group 31-40 there were 9% and other age groups between 2-6% of the total respondents. The survey results show that the age of 21-30 years is a productive age where someone already has income. This age condition can also be said to be a productive age condition in socializing in the environment. Based on this, it can be concluded that the majority of type C alcohol is consumed by the age group of 21-40 years. The age factor can affect a person's taste for a product or service (Amreny, 2012). Riskesdas (2018) based on the research shows that 3.3% of the total Indonesian population consumes alcohol and the largest number of people

who consume alcohol are in the productive age group, 20-24 years of age with the total 6.4% and 25-29 years of age 5.6 %. The characteristics of respondents based on age presented in Figure 1.

Characteristics of Respondents Based on Gender

A person's gender can affect kinds of activities carried out a desire (Mandasari *et al.*, 2019). The male respondents in this survey were 84% and the female respondents were 16%. Based on the survey results, it was shown that the respondents who consumed type C alcoholic beverage were mostly male. The survey results show that female respondents consume alcoholic beverage types A and B because the beverage content is smaller number of alcohol, which affects the taste which is lighter. Riskesdas (2018) shows that 6.1% of the male population in Indonesia consumes alcohol, while the female population consumes alcohol only 0.4% of the total population. The characteristics of respondents based on gender presented in Figure2.

Characteristics of Respondents Based on Consumer Origin

Origin of Consumer is included in consumer demographic characteristics because consumers of type C alcoholic beverages not only come from within the country but also abroad from various continents. Domestic consumers who conducted this survey were 63.50% of the total respondents who came from various regions including Denpasar, Gianyar, Badung, Surabaya, Bandung, Yogyakarta, Jakarta and Medan. Foreign consumers are classified into several continents including 16.00% from the European continent, where respondents come from several countries including Germany, Italy, the Netherlands, France and Russia, 8.50% of respondents from the continent of Australia who come from various states, 7, 50% of respondents from the Americas including from Brazil, Argentina, Canada and Washington, 3.50% of respondents from Asia who came from India, Thailand, Malaysia and Japan, 1.00% of respondents from the African continent who came from South Africa. It can be said that the target market for type C alcoholic beverages is very broad, including local people, domestic tourists and foreign tourists. The characteristics of respondents based on consumer origin presented in Figure 3.

Consumer Satisfaction Level

The level of customer satisfaction for each attribute and as a whole can be seen in the illustration above and for grouping satisfaction based on the Cartesian diagram can be seen in the following figure. Overall, the level of consumer satisfaction with Arak EGO Pala is within the criteria of 80-100%, namely with a satisfaction index value of 90.86%, which means that the company's performance has been able to fulfil consumer desires, although there are still things that need to be improved to be even better.

The origin of the product (11) is the attribute with the highest satisfaction level of 104.84%, while *mouthfeel* (5) is the lowest with a satisfaction index score of 75.01% as already presented in Table 4.

Based on the table above, the attribute of taste in the mouth (mouthfeel) is the attribute that is considered the most important by respondents, followed by aftertaste, primary taste and nasal taste. Three of the four attributes considered important by consumers are attribute components that can be classified as sensory quality. In most of the servqual that included taste as an attribute, it is concluded that the attribute of taste always ranks above what consumers choose based on the level of importance (Mandasari *et al.*, 2019). Brand used to identify the source of product. Brands assist consumers in providing information about the origin of a product, such as the origin of the product manufacturer, quality, perceptions of the product and other matters relating to the product (Keller, 2008).

Table.1 Liquor Attributes

No.	Attributes
1	Brand or Name of liquor
2	Information of Ingredients
3	The Colour of liquor
4	Aroma
5	Primary Taste
6	Mouthfeel
7	Nasal
8	Aftertaste
9	Volume
10	% Alcohol
11	Packaging
12	Label Design
13	Price
14	Origin
15	Product availability in various location

Table.2 Validity Test Result

No.	Attributes	Importance	Performance	Status
1	Brand or Name of liquor	0,657	0,493	valid
2	Information of Ingredients	0,718	0,704	valid
3	The Colour of liquor	0,641	0,162*	Not valid
4	Aroma	0,683	0,584	valid
5	Primary Taste	0,715	0,756	valid
6	Mouthfeel	0,722	0,704	valid
7	Nasal	0,759	0,500	valid
8	Aftertaste	0,579	0,776	valid
9	Volume	0,200*	0,878	Not valid
10	% Alcohol	0,311*	0,494	Not valid
11	Packaging	0,709	0,533	valid
12	Label Design	0,696	0,621	valid
13	Price	0,555	0,649	valid
14	Origin	0,788	0,474	valid
15	Product availability in various location	0,505	0,298*	Not valid

*) Nilai Pearson Correlation 2-tailed < 0,361 (N = 30, α = 0,05)

Table.3 Importance Performance Analysis

No.	Attributes	$\overline{X}$	$\overline{Y}$	Tki (%)
1	Brand or Name of liquor	3,65	3,55	102,97%
2	Information of Ingredients	3,76	3,80	99,04%
3	Aroma	3,73	4,11	90,84%
4	Primary Taste	3,26	4,14	78,65%
5	Mouthfeel	3,14	4,19	75,01%
6	Nasal	3,22	3,91	82,27%
7	Aftertaste	3,24	4,15	78,08%
8	Packaging	3,76	3,72	101,04%
9	Label Design	3,73	3,73	99,97%
10	Price	3,61	4,16	86,78%
12	Origin	3,84	3,67	104,84%
	Rata-rata	**3,54**	**3,92**	**90,86%**

Table.4 Quadrants Mapping of Importance Performance Analysis

Attributes	Total Attributes	Percentage (%)	Attribute No :	Notes
Quadrant A	4	36,36	4,5,6,7	$X < \overline{X}$, $Y > \overline{Y}$
Quadrant B	2	18,18	3,10	$X > \overline{X}$, $Y > \overline{Y}$
Quadrant C	0	0	0	$X < \overline{X}$, $Y < \overline{Y}$
Quadrant D	5	45,45	1,2,8,9,11	$X > \overline{X}$, $Y < \overline{Y}$
Total	**11**	**100**	**11**	

Fig.1 Respondents Based on Age

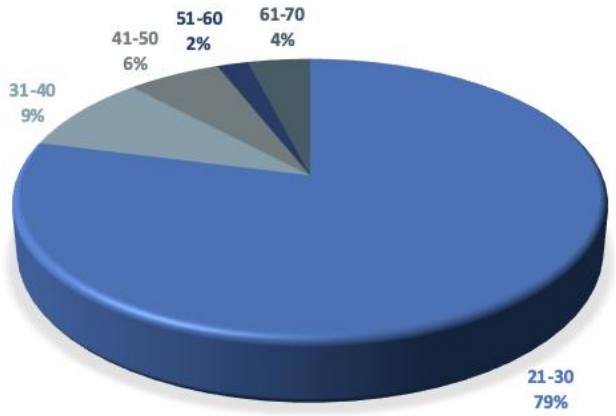


Fig.2 Respondents Based on Gender

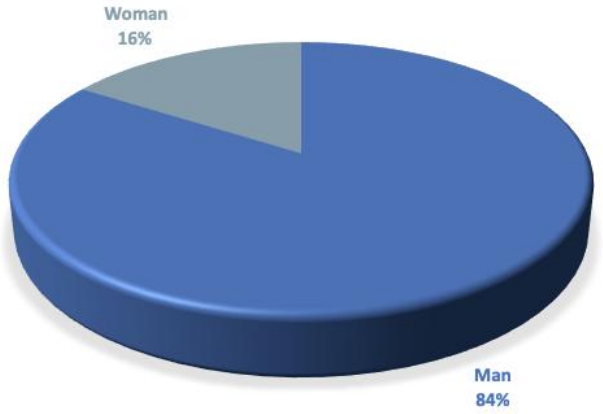


Fig.3 Respondents Based on Origin

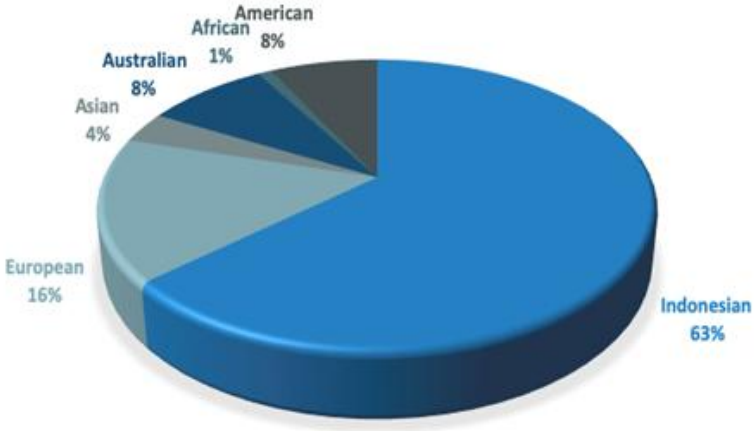
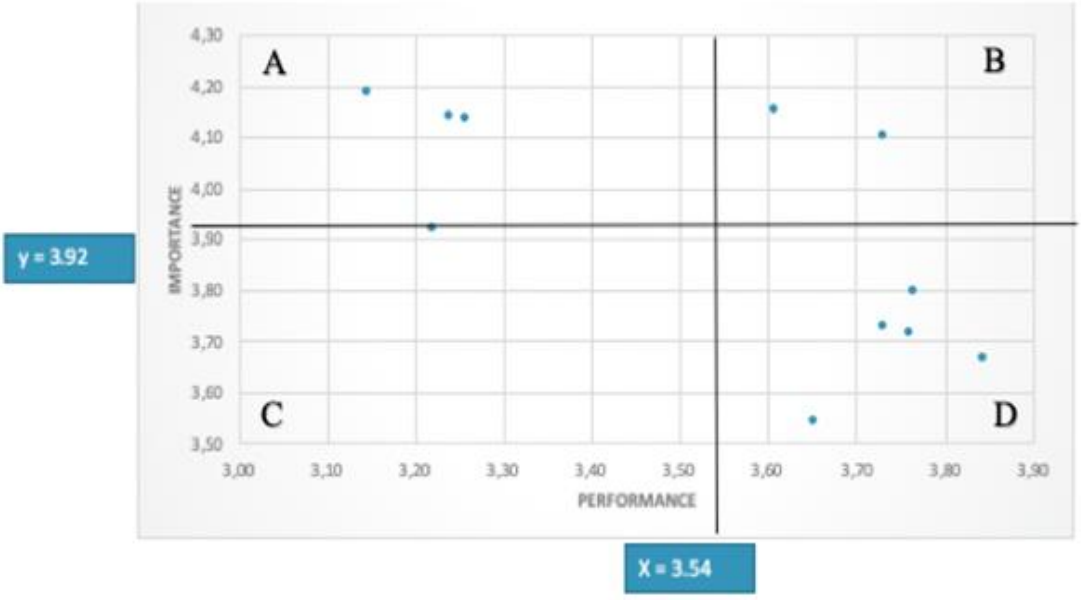


Fig.4 Cartesian Diagram of IPA Arak EGO Pala



Brand identity is a unique brand association that shows promise to consumers. To be effective, a brand identity needs to resonate with consumers, differentiate the brand from competitors, and represent what the organization can and will do over time (Kotler and Pfoertsch, 2008). In most of the servqual that included taste as an attribute, it is concluded that the attribute of taste always ranks above what consumers choose based on the level of importance (Mandasari *et al.*, 2019).

Importance Performance Analysis

Based on Table 5 and Figure 4, the attributes in Quadrant A are attributes that are considered important by respondents but the performance received is considered to be lacking by consumers. There are four variables/attributes included in quadrant A. These attributes are mouthfeel (1), aftertaste (3), primary taste (4), nasal (6).

This means that producers must improve the performance of these attributes because based on the Importance Performance Analysis, Quadrant A is an area where the attributes in it are a priority to be improved in order to meet consumer desires. Based on research, viewed as a percentage, Quadrant A has a value of 36.36% and is a quite large percentage compared to the other quadrants, which means that effort made by the company to increase customer satisfaction is quite large. Quality of alcoholic beverage depend on gustatory perceptions, the attributes are important in order to assess alcoholic beverage (Carpenter *et al.*, 2000)

Attributes that are in quadrant B are attributes that are considered important by respondents and the performance received in practice is considered to be in accordance with consumer expectations. There are two attributes or 18.18% that fall into this quadrant, aroma (3) and price (10) so that companies must be able to maintain the consistency of these attributes.

Attributes that are in quadrant C are attributes that are considered less important by respondents and the performance received in practice is also mediocre. The survey results show that there are no attributes included in this quadrant. Attributes that are in quadrant D are attributes that are considered less important by respondents but the performance received in practice is very good. There are five attributes or 45.45% included in this quadrant. This means that manufacturers must maintain the performance of these attributes, but not too excessive in their implementation.

Based on the evaluation of Arak EGO Pala, the results of the IPA that has been carried out, it is very important for producers to immediately make improvements that have been grouped into quadrant A on the Cartesian diagram. Variable taste in the mouth (mouthfeel), taste at the beginning (primary taste), taste at the end (after taste) taste in the nose (nasal) is a priority for improvement to increase consumer satisfaction, then re-evaluation is carried out to ensure product improvements are accepted by consumers and get value higher satisfaction.

The overall satisfaction index obtained was 90.32% where product origin was the attribute with the highest satisfaction level 104.84%, while the mouthfeel attribute was the lowest with a value of 75.01%. The attributes that are considered the most important and become the top 3 are mouthfeel, price of the product and aftertaste. There are four attributes that need or get priority for improvement, these are sensory attributes, mouth feel, primary taste, aftertaste and nasal.

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