

Consumer Preferences toward Product Attributes in Kopi Ala Kazim Functional Food: A Preliminary Study

Alia Khalidah Ismail¹, Mohamed Syazwan Osman², Mohamad Syafiq Abdul Wahab¹, Nur Sakinah Burhan¹, Muhammad 'Arif Aizat Bashir², Nur Aifa Binti Fadil², Muhammad Iqmal Bin Mohd Sabry², Nurin Irdina Zamri²

¹EMZI Holding Sdn. Bhd. EMZI HQ, Menara Kompleks SP Plaza, Jalan Ibrahim, Sungai Petani, 08000 Sungai Petani, Kedah, ²EMZI-UiTM Nanoparticles Colloids & Interface Industrial Research Laboratory, (NANO-CORE), Universiti Teknologi MARA, Cawangan Pulau Pinang, 3500 Permatang Pauh, Pulau Pinang
Corresponding Author Email: aliananocore@gmail.com

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v14-i2/20803>

DOI:10.6007/IJARBSS/v14-i2/20803

Published Date: 09 February 2024

Abstract

A preliminary study was conducted to identify consumer preferences toward product attributes in Kopi Ala Kazim functional food. The nutraceutical product known as Kopi Ala Kaizm (KAK) combines healthy foods like coffee, momordica charantia, and goat milk and is known to improve consumer health, packaged with calcium, carbohydrates, and vitamins that contribute to the growing demand for the KAK industry. Furthermore, despite health promises to prevent all diseases, KAK intake is increasing year-round. However, Malaysians currently choose to consume nutritious products in a convenient manner. This is because food quality has become increasingly important in consumer food choices, such as product attributes, which must meet expectations in order to satisfy consumer needs and wants. Thus, the study aims at identifying the factors influencing consumer preferences toward product attributes in KAK. Convenience sampling will use for a pilot test to select 28 consumers (the actual respondent is 300 consumers) to represent Uitm Permatang Pauh community. Primary data will conduct at the UiTM Permatang Pauh and the data was gathered using a structured survey. Data will analyze using descriptive analysis. The conclusions of this study on factors that influenced product attributes will benefit marketing strategy, marketing activities, and tools to capture customers' needs and wants and urge them to purchase KAK. Furthermore, the findings of this study will allow players in the KAK market to develop new methods for expanding KAK consumption among consumers.

Keywords: Coffee, Momordica Charantia, Consumer Preference, Kopi Ala Kazim, Product Attributes

Introduction

Over the past twenty years, there has been a significant increase in the demand for food nourished with nutraceutical ingredients (Gahche, 2011). The creation of new functional food using unique components without the use of chemicals or artificial colours is the primary emphasis of the natural health market. These goods are designed to meet customer's nutritional requirements while also enhancing lifestyle and reducing chronic diseases (Ozen et al., 2012). *Momordica charantia* or bitter melon is a unique and nutraceutical ingredient employed in Kopi Ala Kazim (KAK) functional food in this study. It is mixed with a flavorful blend of robusta and arabica coffee to mask the aftertaste of bitterness in *Momordica charantia*. Traditional medicine also makes extensive use of *Momordica charantia*, particularly to treat diabetes (Abascal & Yarnell 2005). According to Thent et al (2018), *Momordica charantia* is mostly utilised to control diabetes mellitus. Tan et al (2008) exposed that antidiabetic action by triterpenoid compounds that are found in bitter melon. *Momordica charantia* is frequently consumed by consumers for health reasons, therefore KAK is the ideal option.

It is believed in this day and age that the enhancement of a food product must be guided by consumer preference in order to be successful. This strategy, which is also known as the consumer-oriented approach, evaluates products according to the degree of satisfaction they provide for customers. This is dependent on the level of correlation that exists between the attributes of the product itself and the preference structures of the consumers. However, this preference varies from consumer to consumer, and as a result, the quality of the product is dependent not only on the product's objective characteristics (such as its nutritional, microbiological, and textural characteristics), but also on what can be defined as the result of a subjective process that is based on the consumer's perception of the product (Ophuis & Trijp, 1995; Migliore et al., 2015).

Marketing relies heavily on customers' opinions of products' attributes. The viewpoints of consumers regarding the qualities of a product attribute are extremely important to product development and innovation for this research. In order to attract buyers at the bottom of the pyramid, innovative strategies are needed (Pizzagalli et al., 2018). According to Battour et al (2011), it has been observed as a significant role in differentiating their brands from those of their rivals. When purchasing a product, buyers are looking for benefits, which are provided in part by the product's attributes. Therefore, new product attributes influence the decision-making process of consumers. The roles of aesthetic and symbolic value, contradictory functional qualities, and ease of usage are all played by attributes in a system. Marketers are able to produce effective product qualities that consumers search for if they have a thorough understanding of consumer preferences for product attributes as well as how consumers arrive at their decisions at the time of purchase.

Effective product characteristics that customers seek can be found in powder and tablet form. One of the most common methods of self-administering medications and nutritional supplements is by means of tablet form (Cronin et al., 2015). On the other hand, sachet marketing is extremely detrimental to the environment since it results in the constant production of litter consisting of discarded packaging materials, and because sachets can contribute to the polluting of the land if they are not naturally biodegradable (Sy-Changco et al., 2009). Recent research has concentrated on the development of unique formulations of food tablets, which consist of powdered fruits or plants as natural goods. These food tablets

are recommended for all categories of customers (Adiba et al., 2011). Several authors have made natural tablets, including Spirulina and date, pitaya and guava mixed powder blend, green and ripe mango, pitaya/maltodextrin, Ficus deltoidea, Terminalia chebula fruit, (Osorio-Fierros et al., 2017); also tableting for momordica charantia product (Mishra et al., 2023).

Natural supplement tablets are made by turning powdered supplements into tablets without the need to add excipients. For this to happen, the powder should flow well and be easy to pack. Fitzpatrick et al (2004) said that these qualities help solve problems with critical quality attributes and post-processing handling, packaging, and storage. Granulation is a common way to improve the way these powder blends can be pressed into tablets. Kristensen, and Schaefer (1987) said that the process improves the flow properties of the mix, stops the ingredients from separating, leads to better compression properties of the tablet mixture, and makes handling less dusty. In particular, high-shear wet granulation is a common way to turn fine, cohesive powders into granules that are relatively dense. Shi et al (2011) said that shearing and compaction forces caused by the impeller and smaller chopper blade turning at high speeds break up large agglomerates and mix, densify, and clump wet powder particles.

Material and Method

Before expanding the scope of the research, a preliminary test, or pilot study, was conducted on a smaller scale. The pilot study gives researchers the opportunity to identify and resolve any potential problems, as well as change the questionnaire as necessary to ensure that it is free of errors. A pre-test gives the researcher the opportunity to become more familiar with the items on the questionnaire that are vague and ill-defined. In order to offer exact estimates that will satisfy a variety of conceivable goals, samples ranging from 10 to 40 per group are analysed. Because of this, there were around 28 respondents that responded to the survey for the pilot study. Each respondent provided an answer for each and every item that was included in the structural questionnaire. As the feedback from the respondents was essential for carrying out the research on a larger scale, they were asked to provide information regarding their thoughts and comments on the format of the questionnaire. This included the number of questions, the formatting, the clarity, the time, and their understanding of the questions.

A structured questionnaire was developed, which included both close-ended and open-ended questions, with the purpose of determining the consumers' perspectives on the product features present in KAK functional food. The raw data were simplified through the use of descriptive analysis in order to facilitate better comprehension and interpretation of the findings. In this study, descriptive analysis was used to explain the socio-demographic profiles of customers; to identify the general information on preferences for product attributes, and to identify the consumer preference toward tableting KAK. When calculating the frequency distribution, each individual's data as well as the classification variables were taken into account.

Section A (socio-demographic profiles) included questions about the respondents' profiles, which were generated using a nominal scale. The purpose of this section was to acquire information regarding the socio-demographic background of the respondents including age, gender, education level, occupation, income, marital status, and household size. Section B (general information on preferences for product attributes) consisted of questions that emphasized on gathering information about the product attributes most valued by the

customer. This question is illustrated with an image of the transition from sachet powder to tablet form for the KAK functional food (Figure 1.1). Section C (consumer preference toward tableting KAK) had questions that inquired about the preferences of customers for newly introduced KAK attributes. In this section, respondents were asked to pick the option that best described their thoughts on whether or not preferred attributes were a significant criterion when deciding to purchase KAK.

Result and Discussion

Socio-demographic profiles

Table 1.0 is a summary of the results of determining and analysing the socio-demographic profiles of the respondents in order to gain a better understanding of the respondents' socio-demographic backgrounds. 39.3 % of respondents fell into the age of 35 to 44 years old, making up the majority age group for this research. 71.4 % of those surveyed identified as female, while only 28.6 % identified as male. In terms of the level of education, the majority of respondents have a higher education level, as indicated by the fact that 60.7% of them have it, while 39.3% of them have a lower education level. In the meantime, a total of 42.9 % of jobs were held in the private sector, compared to the government's 50 % highest in the occupation group. 7.1% of the population was unemployed. The proportion of people whose income falls between RM1001 and RM2000 makes up the majority (39.3 %), while the percentage of people whose income falls between RM5001 and above makes up the second largest (21.4%). 64.3 % of the respondents were married, while just 35.7 % of them were single. The majority of the respondents were married. The total number of people who live in a home is used to characterise the size of the household that resides there. According to the findings, the majority of respondents have between three to four people living in their homes accounted for 28.6 % of the total and the same percentage applies to households with five to six people.

Table 1.0

Socio-demographic Profile

Demographic variables	Frequency (n)	Percentage (%)	
Age	18-24	4	14.3
	25-34	3	10.7
	35-44	11	39.3
	45 and above	10	35.7
Gender	Male	8	28.6
	Female	20	71.4
Education level	Lower education	11	39.3
	Higher education	17	60.7
Occupation	Government worker	14	50.0
	Private worker	12	42.9
	Unemployed	2	7.1
Income (in RM)	RM 1000 and below	4	14.3
	RM 1001 – RM 2000	11	39.3
	RM 2001 – RM 3000	4	14.3
	RM 3001 – RM 4000	1	3.6
	RM 4001 – RM 5000	2	7.1

	RM 5001 and above	6	21.4
Marital status	Single	10	35.7
	Married	18	64.3
Household size (person)	0	3	10.7
	1 to 2	5	17.9
	3 to 4	8	28.6
	5 to 6	8	28.6
	7 and above	4	14.3

Respondent's preference toward product attributes

In this section, we'll discuss the attributes of functional foods that respondents valued most. This encompasses a wide range of aspects, including a preference for a variety of shapes, sizes, and textures, as well as a preference for a variety of colours.

Table 1.1 displays respondents' preferences for a variety of colours scheme, showing that the most popular choice is brown (64%), followed by green (7%), yellow (14.3%) and red (14.3%). As a result, it's clear that most respondents prefer the same coffee colour scheme to any potential changes. Using a colour scheme similar to that of coffee colour would alert the target market to the fact that this is a functional food. This will set coffee tablets apart from other functional foods on the market.

Table 1.1

Different Scheme Colour of Tablet Attributes









Attribute: Different Colour	Frequency (n)	Percentage (%)
Sample A (brown colour)	 18	64.3
Sample B (green colour)	 2	7.1
Sample C (yellow colour)	 4	14.3
Sample D (red colour)	 4	14.3

Table 1.2 illustrates the characteristic of having the same colour palette with the same colour of coffee. It was discovered that the lighter colour of sample C has a percentage that is 35% higher than any other colour. Sample C was the one that the respondent liked the most, which indicates that the respondent finds its physical appearance to be more appealing. They will become more interested in making their initial buy as a result of the lighter colour.

Table 1.2

Same Scheme Colour of Tablet Attribute

Attribute: Same Colour		Frequency (n)	Percentage (%)
Sample A (darker)		6	21.4
Sample B (darker to lighter)		6	21.4
Sample C (lighter)		10	35.7
Sample D (more lighter)		6	21.4

In terms of the shape attribute, Table 1.3 and Figure 1.2 demonstrated that the majority of respondents preferred the round shape for fifty percent among other shapes. However, some respondents favoured other shapes, including the rectangle (3.6 %), capsule (17.9 %), almond (3.6%), oval (10%), triangle (3.6%), core rod (3.6%), and heart shape (7.1 %).

Table 1.3

Shape of Tablet Attribute

Attribute: Shape	Frequency (n)	Percentage (%)
Round	14	50.0
Square	0	0
Rectangle	1	3.6
Capsule	5	17.9
Almond	1	3.6
Pentagon	0	0
Oval	3	10.0
Lozenge	0	0
Diamond	0	0
Triangle	1	3.6
Core rod	1	3.6
Heart	2	7.1

When asked about the round shape of tablets (Figure 1.3), respondents indicated that they preferred the round shape 89.3 % in Table 1.4 below, whereas 10.7 % of respondents expressed opposition to the round shape.

Table 1.4

Round Shape of Tablet Attribute

Attribute: Shape Round	Frequency (n)	Percentage (%)
Yes	25	89.3
No	3	10.7

Table 1.5 and Figure 1.4 of size attribute found that respondents preferred size C by 32.1%, while sizes A, B, and D were preferred by the respondent by 25.0%, 28.6%, and 14.3% respectively.

Table 1.5




Size of Tablet Attribute

Attribute: Size	Frequency (n)	Percentage (%)
Size A	7	25.0
Size B	8	28.6
Size C	9	32.1
Size D	4	14.3

Furthermore, Table 1.6 below showed that the texture of the tablet showed that most of the respondents preferred compressed tablets which consist of 46.4%. the texture of chewable tablets accounted for 39.3% and effervescent tablets accounted for 14.3%. The look of a product's size and design has been found to have a significant effect on consumer choice (Creusen and Schoormans, 2005).

Table 1.6

Texture of Tablet Attribute

Attributed: Texture	Frequency (n)	Percentage (%)
Sample A (Chewable tablet)	 11	39.3
Sample B (Effervescent tablet)	 4	14.3
Sample C (Compressed tablet)	 13	46.4

Consumer preference toward tableting KAK

Based on the attribute most prefer in Table 1.7, the majority of respondents preferred the colour attribute as the highest ranking for product attribute preferences 64.3%; also the attribute that less prefers is the texture attribute. Most of them choose texture apart from another attribute 57.1%.

Table 1.7

Texture of Tablet Attribute

Attribute most prefer	Frequency (n)	Percentage (%)	Attribute less preferred	Frequency (n)	Percentage (%)
Colour	18	64.3	Colour	3	10.7
Shape	3	10.7	Shape	5	17.9
Size	5	17.9	Size	4	14.3
Texture	2	7.1	Texture	16	57.1

Table 1.8 below shows that if the KAK functional food is designed based on their chosen preferences above, they will consume the KAK tablet by 92.9%. The tablet was preferred because of important reasons such as 'accessibility, affordability, and dosage controllability' (Naidu, 2017; Sy-Changco et al., 2009).

Table 1.8

Texture of Tablet Attribute

Will consuming the preferred tablet	Frequency (n)	Percentage (%)
Yes	26	92.9
No	2	7.1

Conclusion

This research aims to focus on how Malaysian customers feel about product characteristic innovations ranging from the sachet to the pill. By showing that different attributes can produce different preferences, this study aims to contribute useful information to the KAK industry. Consumers' preferences for the attributes of KAK functional food have been identified, and these attributes should be incorporated into the marketing strategy, marketing activities, and marketing tools. Since respondents valued colour quality the most among all attributes, these results expand our understanding of consumer preferences toward product attributes and satisfaction. By combining these resources, experts will have everything they need to establish internal procedures for quality control and product development that take into account the unique characteristics of KAK functional food.

Reference

- Abascal, K., & Yarnell, E. (2005). Using bitter melon to treat diabetes. *Alternative & Complementary Therapies*, 11(4), 179-184.
- Adiba, B. D., Salem, B., Nabil, S., & Abdelhakim, M. (2011). Preliminary characterization of food tablets from date (*Phoenix dactylifera* L.) and spirulina (*Spirulina* sp.) powders. *Powder Technology*, 208(3), 725-730.
- Battour, M., Ismail, M. N., & Battor, M. (2011). The impact of destination attributes on Muslim tourist's choice. *International Journal of tourism research*, 13(6), 527-540.
- Cardello, A. V. (1995). "Food quality: relativity, context and consumer expectations", *Food Quality and Preference*, Vol. 6 No. 3, pp. 163-170.
- Creusen, M. E., & Schoormans, J. P. (2005). The different roles of product appearance in consumer choice. *Journal of product innovation management*, 22(1), 63-81.
- Cronin, K., Ring, D., Sheehan, L., & Foulon, A. (2015). Probabilistic analysis of weight variability in tablets and capsules arising from the filling of a cavity with powder of a poly-dispersed size. *Powder Technology*, 270, 287-295.

- Fitzpatrick, J. J., Barringer, S. A., & Iqbal, T. (2004). Flow property measurement of food powders and sensitivity of Jenike's hopper design methodology to the measured values. *Journal of Food Engineering*, 61(3), 399-405.
- Gahche, J. (2011). *Dietary supplement use among US adults has increased since NHANES III (1988-1994)* (No. 61). US Department of Health & Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics.
- Kristensen, H., & Schaefer, T. (1987). Granulation, a review on wet granulation, *Drug Dev. Ind. Pharm*, 13(4&5), 803.
- Migliore, G., Schifani, G. and Cembalo, L. (2015), "Opening the black box of food quality in the short supply chain: effects of conventions of quality on consumer choice", *Food Quality and Preference*, Vol. 39, pp. 141-146.
- Mishra, R., Ray, A., Singh, A., Tripathy, S., Prasad, S., & Yadav, R. (2023). Development And Evaluation Of Anti Diabetic Activity In Polyherbal Tablets Of Local Herbs. *Journal of Pharmaceutical Negative Results*, 1418-1426.
- Moskowitz, H. R. (1995), "Food quality: conceptual and sensory aspects", *Food Quality and Preference*, Vol. 6 No. 3, pp. 157-162.
- Naidu, A. (2017) 'Strategies for marketing to the rural customer in India: the 4 As model of rural marketing', *Journal of Rural and Industrial Development*, Vol. 5, No. 1, p.35.
- Osorio-Fierros, A., Cronin, K., Ring, D., Méndez-Zavala, A., Morales-Oyervides, L., & Montañez, J. C. (2017). Influence of granulation process parameters on food tablet properties formulated using natural powders (*Opuntia ficus* and *Chlorella* spp.). *Powder Technology*, 317, 281-286.
- Oude Ophuis, P. A., and Van Trijp, H. (1995), "Perceived quality: a market driven and consumer oriented approach", *Food Quality and Preference*, Vol. 6 No. 3, pp. 177-183.
- Ozen, A. E., Pons, A., & Tur, J. A. (2012). Worldwide consumption of functional foods: a systematic review. *Nutrition reviews*, 70(8), 472-481.
- Pizzagalli, L., Sharma, A., & Lascu, D. N. (2018). Marketing at the bottom of the pyramid: Serving, and in the service of low-income consumers. *Innovative Marketing*, 14(2), 35-40.
- Shi, L., Feng, Y., & Sun, C. C. (2011). Massing in high shear wet granulation can simultaneously improve powder flow and deteriorate powder compaction: A double-edged sword. *European Journal of Pharmaceutical Sciences*, 43(1-2), 50-56.
- Sy-Changco, J. A., Pornpitakpan, C., and Singh, R. (2009) 'Mini-sizing consumption or whetting the appetite? Managerial insights on sachet marketing strategies of consumer goods companies', Paper presented at ANZMAC 2009, Melbourne, December.
- Tan, M. J., Ye, J. M., Turner, N., Hohnen-Behrens, C., Ke, C. Q., Tang, C. P., ... & Ye, Y. (2008). Antidiabetic activities of triterpenoids isolated from bitter melon associated with activation of the AMPK pathway. *Chemistry & biology*, 15(3), 263-273.
- Thent, Z. C., Das, S., & Zaidun, N. H. (2018). Emerging trends on drug delivery strategy of *Momordica charantia* against diabetes and its complications. *Current Drug Delivery*, 15(4), 453-460.

Appendix
List of Figure

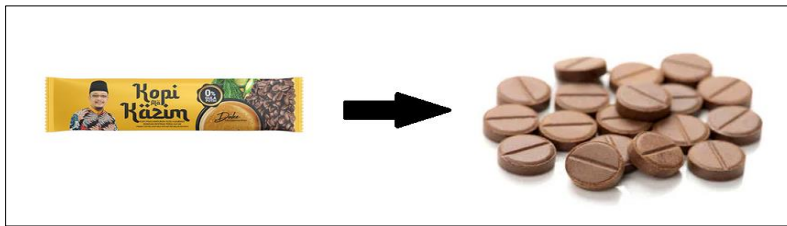


Figure 1.1: The transition from sachet powder to tablet form for the KAK functional food

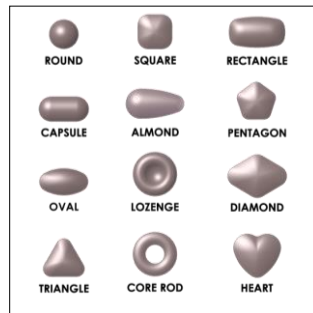


Figure 1.2: The Shape of Tablet Attribute



Figure 1.3: The Round Shape of Tablet Attribute

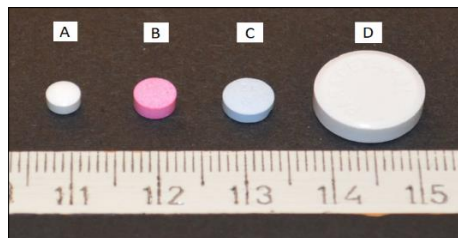


Figure 1.4: The Size of Tablet Attribute