

Analysis of Product Quality Dimension as a First Step to Meet Customers' Expectation and Desire: Case Study of FOI Almond Milk

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Abstract. Plant-based food is recently trending in Indonesia, in which among the most-consumed is nut-based food such as almonds, soybeans, edamame (Japanese beans), and others. With this great opportunity, a small-scale business named FOI has established. FOI is a business that provides almond-based milk. Besides the trending demand, another goal of FOI is to raise awareness among Indonesians about the importance of consuming milk. FOI almond milk is consumable particularly for those who are intolerant to lactose, allergic to cow's milk, and safe for pregnant and breastfeeding mothers. As a newcomer, FOI certainly faces obstacles and weaknesses that must be evaluated to meet consumer expectations and desires, since customer satisfaction is a crucial factor to maintain business. This research was conducted using the Importance Performance Analysis method by testing 27 attributes from 8 dimensions of product quality and comparing the performance results of FOI almond milk to customer interests. The results show that 3 attributes must be prioritized for improvements; texture, aroma, and untidy packaging and presentation. 13 other attributes with good performance that must be maintained are the milk's good taste, practicality (ready to drink), clean packaging, serving, 100% natural ingredients, swift service, and best product quality.

Keyword: Product Quality, Customer Satisfaction, Small and Medium Enterprise

1 Introduction

Having a healthy body is one of the most desirable conditions for everyone. Health can be interpreted as a condition where the physical, mental and social states are free from any disease or disorders that can prevent activities from being performed optimally [1]. A healthy lifestyle itself refers to behavioural patterns of daily activities as an effort in maintaining the physical, mental, and social conditions in a positive state [2].

One of the resolutions that is quite popular among the people today is to live a healthy lifestyle by consuming plant-based foods. In Indonesia, consuming plant-based foods is not a new thing. As a matter of fact, in 2017, 39% of the Indonesian population consumed products derived from non-animal protein, and another 24% had adopted a plant-based diet [3].

One way that can be done to maintain health is consuming good food and drinks, especially milk. It is one of the most consumed beverages by human for a long time because of its nutritional value and various benefits. It also contains valuable nutrients, such as calcium and protein that can help and support the body growth. However, due to allergy or intolerance

towards cow's milk, or ethical or environmental reasons, people tend to not consume it. Meanwhile, if we dig deeper, there are various plant-based milk products, such as almond milk or soybean milk that can be used as a substitute for cow's milk. Nutrition-wise, almond milk is very different from soybean milk or cow's milk because almond milk contains fewer calories and is also fat-free and lactose-free [4]. Therefore, for people with difficulties in digesting dairy products or are lactose intolerant, allergic to cow's milk or on a vegan diet, almond milk is a good alternative to cow's milk. As Indonesia is one of the countries that are experiencing growth towards alternatives to cow's milk [5], the almond milk business is a great opportunity to be taken advantage of at this time because it has the opportunity to develop.

FOI is a home-based business that sells dairy product which use almonds as the main ingredient. FOI comes from French which means faith, because the owner believes that a healthy lifestyle and good food will have a positive impact on everyone. So, the presence of FOI is expected to make help lactose intolerant sufferers to consume milk. Other than its many benefits, FOI also contains natural ingredients and is safe for those who are allergic to dairy products or dairy intolerant thus that they can continue consuming milk. Up to this day, FOI has succeeded in selling more than 500 bottles.

During the trial period, researchers have found a lot of things that must be improved in FOI business, and one of them is the product quality. It is very important in e-commerce to help maintain customer satisfaction and loyalty as well as reducing the risk and cost of replacing damaged goods.

As a start-up business, FOI must be able to compete by making products that can meet customers' expectations. According to Cronin and Taylor [6], there is a significant positive relationship between customer satisfaction and product quality in affecting the decision of repurchasing the product. In other words, when customers make the decision to repurchase FOI almond milk product, it means the customers were putting their trusts in that product. Therefore, the business owners must realize that one way to stay competitive is by being consistent in providing better quality products than the competitors. This is because customers who are satisfied with the products and services they received would give testimonials in the form of invitations or recommendations to others to buy FOI almond milk.

2 Method

The purpose of this study is to determine if the customers are satisfied with the producer's performance of FOI almond milk product. The method used in this study is *Importance Performance Analysis (IPA)* with the help of Microsoft Excel and SPSS software ver. 26. *Importance Performance Analysis (IPA)* model has two variables that determine customer satisfaction, namely, expectation and performance.

Expectation is customers' expectation of the desired product while performance is customers' opinion on producer's performance. These will be measured in 8 dimensions, namely, performance, reliability, features, conformances, durability, serviceability, aesthetic, and perception.

The population in this research includes all consumers who have purchased FOI almond milk, amounting to 110 people. The sampling technique used in this research is saturated sampling which is included in *Non Probability Sampling* technique. Sugiyono [7] explains that saturated sampling is a sampling technique where all population members are used as samples.

In this research, the sample was taken from the entire 110 people of FOI almond milk's customers. This was because the population numbers were considered capable to be reached.

The data processing was carried out using *Importance Performance Analysis* method. It is a method that determines what quality attributes of any products that are considered important and how the performance is perceived by customers to the services provided by the seller. IPA analysis was carried out using SPSS software ver. 26 which provides graph scatter/dot analysis feature as presented in Cartesian diagram.

The indicators of the 8 dimensions of product quality are given as follows:

- a) Performance Dimension
 - FOI almond milk has a really good texture.
 - FOI almond milk has a great taste.
 - FOI almond milk has a good serving size (250ml and 1L).
 - FOI almond milk has a very good aroma.
- b) Reliability Dimension
 - FOI almond milk's delivery is fast.
 - FOI almond milk is ready-to-consume milk.
 - FOI almond milk can be mixed with food (cereal, biscuit etc.) or other beverages (smoothies, coffee etc.).
- c) Features Dimension
 - FOI almond milk's packaging and presentation are very neat.
 - FOI almond milk's packaging and presentation are very clean.
 - FOI almond milk is made from 100% natural ingredients.
 - FOI almond milk has a distinctive taste (different from other brands).
- d) Conformances Dimension
 - FOI almond milk's price is in accordance with its ingredients.
 - FOI almond milk's price is in accordance with its perceived benefits.
 - FOI almond milk meets the expected standards and quality.
 - FOI almond milk's content is in accordance with its claims (contains natural ingredients without artificial sweeteners and preservatives).
- e) Durability Dimension
 - FOI almond milk's packaging durability is good.
 - FOI almond milk's storage span is 3 days (refrigerated).
 - FOI almond milk has the same taste consistency from the first day to the next two days (refrigerated).
- f) Serviceability Dimension
 - FOI almond milk's seller service is very fast.
 - FOI almond milk's seller has a good response when there are requests from customers regarding the product.
 - FOI almond milk's seller treats customers with care.
- g) Aesthetic Dimension
 - FOI almond milk's presentation attracts attention.

- FOI almond milk's choice of packaging is very good.
- The clarity of writing on the packaging is very good (font, size, colour, etc.)

h) Perceived Dimension

- There are positive feedbacks (become healthier, fresher, producing more breast milk for a pregnant and lactating mothers) after consuming FOI almond milk.
- The ingredients used for FOI almond milk are of good quality.
- The overall quality of FOI almond milk is very good.

Cartesian diagram is a chart that consists of 4 parts and is circumscribed by two lines that intersect perpendicular to the point (X, Y). The X axis is the average score of the performance level of all attributes, and Y is the average score of the importance level of all attributes that affect customer satisfaction. Furthermore, the levels of these elements are described in 4 parts of the Cartesian diagram. The following is an image of a Cartesian diagram which has different functions:

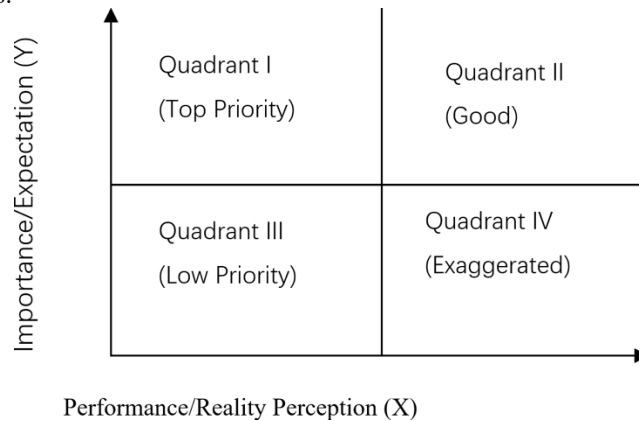


Fig. 1. Cartesian Diagram
(Elaborasi Data Pribadi, 2021)

The interpretation of the quadrants are as follows:

1) Quadrant I (Top Priority):

In this quadrant, there are areas consisting of attributes that are considered important and/or expected by the customers, but in reality, the company's performance has not yet met that expectation. Therefore, the company must improve every attribute that is included in this quadrant by concentrating on making continuous improvements to their performance.

2) Quadrant II (Good Achievement):

In this quadrant, there are areas containing attributes that are considered important and expected to be supporting factors for customer satisfaction. Therefore, the performance achievements must be maintained.

3) Quadrant III (Low Priority):

In this quadrant, there are areas containing attributes that are considered to have a low level of perception or performance and not too important or expected by customers. Therefore, the company does not need to prioritize or pay more attention to the attributes in this quadrant.

4) Quadrant IV (Exaggerated):

In this quadrant, there are areas that contain attributes that are considered less important by customers or are deemed too excessive yet is considered good or even exceeding customers'

expectation. Attributes included in this quadrant can be reduced for the company cost efficiency.

3 Result and Discussion

The distributed questionnaires have been tested for validity and reliability tests with the results of more than r table on the validity test and r count > r table on the reliability test thus the research can be continued.

Importance Performance Analysis is done by calculating the average value of each statement attribute from the importance and performance attributes. If there are attributes that are considered important by respondents but the performance results are not good, special attention is needed to improve product quality. Priority mapping analysis in this research was carried out on all respondents, and data processing was carried out using SPSS software ver. 26. From the data processing, Cartesian IPA diagram was obtained for all customer respondents on customer satisfaction for FOI almond milk as illustrated in the following:

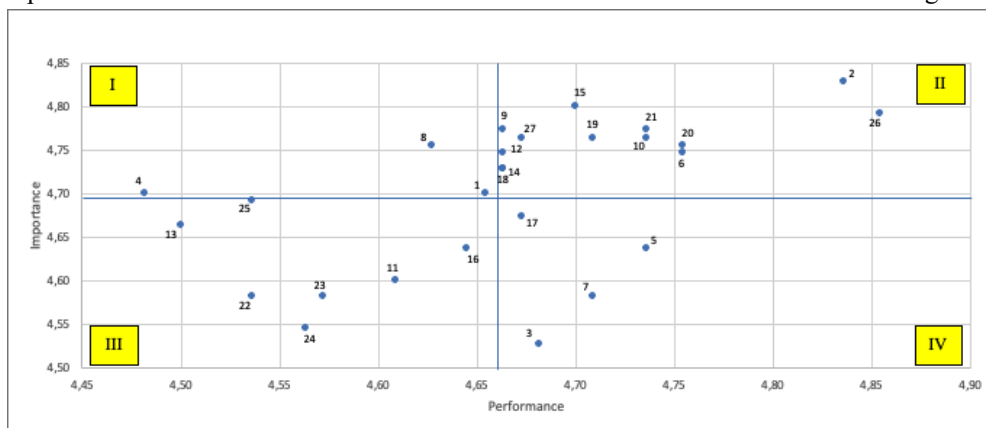


Fig. 2. Importance & Performance Matrix

Based on the Fig. 2, it is apparent that 3 attributes are in quadrant I, 13 attributes are in quadrant II, 7 attributes are in quadrant III, and 4 attributes are in quadrant IV.

The following is a description of the attributes of the Cartesian diagram:

Quadrant I is the top priority when customers perceive that these attributes are very important and highly expected, but they have not had the maximum performance yet. The attributes in this quadrant are that FOI almond milk has a really good texture, that FOI almond milk has a very good aroma, and that the packaging and presentation of FOI almond milk are very neat. The texture and aroma attributes are attributes of the performance dimension, while the packaging and presentation attributes are of the features dimension.

FOI almond milk has a very thick texture which means that the almond content is very high, around 90%. A cold FOI almond milk will also produce a thicker texture compared to milk that is stored at room temperature. The longer the milk is stored at low temperature, the more the milk will precipitate. Therefore, it is suggested to shake the milk before consumption that the overall texture is evenly mixed and nothing settles at the bottom. Improvements can be made by adding stickers or labels that provide information, such as “shake before drink”.

As for the aroma attribute, FOI almond milk uses natural ingredients without artificial sweeteners or preservatives, thus the aroma quality of FOI almond milk relies only on raw ingredients provided by the suppliers at that time.

The packaging and presentation attributes of FOI almond milk are considered important by customers though the performance level is still low or unsatisfactory. Food and beverage presentation is one of the determining factors in the appearance of the served dishes. The presentation of FOI almond milk uses a glass bottle for the 250ml size and a plastic bottle for the 1L size. FOI almond milk bottle is covered with bubble wraps and given ice gel then is kept in a plastic bag to keep the product safe and cool during the delivery process. Therefore, customers may perceive that this kind of packaging of FOI almond milk is not neat and has not met their expectation yet. Replacing the plastic bag packaging in the future is considered better and necessary in order to solve that problem. This is also supported by the opinion of Moehyi [8] which explains that food presentation is important for the appearance of the served dish, for it will stimulate the sense of sight which is related to the dish taste.

Customers' preferences will be difficult to form if the product has unsatisfactory performance. Therefore, it is necessary to make improvements, especially in quadrant I because the attributes in this quadrant are highly expected but their performance is considered not good. It is necessary to concentrate on making continuous improvements to the performance.

Quadrant II shows the presence of attributes that are considered important by customers, and their performance is considered good. In this quadrant, it can be seen that FOI almond milk has a great taste, and the ingredients used in FOI are materials with good quality and have the best performance due to the positive gap value, amounted 0,01 and 0,06. Therefore, these attributes can be used as the main benefit of FOI almond milk. According to Moehyi. S [8] taste is a factor that determines the flavour of the food after presentation. For that reason, FOI almond milk needs to maintain the quality of its current taste. Moreover, the majority of customers purchase FOI almond milk because of its delicious taste.

Reliability dimension is the only dimension in which all of its attributes have good performance and are in accordance with customers' expectation. These attributes are that FOI almond milk's fast delivery, that FOI almond milk is a practical ready-to-consume-milk, and that FOI almond milk can be mixed with food (cereal, biscuit etc.) or other beverages (smoothies, coffee etc.) Customers' satisfaction can be achieved if the product has good quality, cheap price, fast delivery time, and good service (Dehaldi, 2006). Thus, the performance of all attributes in this dimension must be maintained and can be used as company Standard Operating Procedures (SOP).

Attributes in quadrant III are those the customers perceive as not too important, thus the importance level is not too high and the performance is considered normal. Therefore, FOI almond milk should not focus on improving the attributes in this quadrant. The result of the analysis shows that there are 7 attributes in quadrant III, of which 1 attribute is in features dimension, 1 attribute is in conformances dimension 1 is attribute in durability dimension, 3 attributes are in aesthetic dimension, and 1 attribute is in perceived dimension.

If viewed as a whole, all attributes in aesthetic dimension are in quadrant III. This means that the customers consider presentation, packaging, and labelling not as important factors that can affect their decisions in purchasing the product. They consider that taste is the main factor, especially for those who decide purchasing FOI almond milk more than once.

Quadrant IV shows the attributes that customers consider to have good performance and even tend to exceed their expectations when they actually do not have high expectation on them. Therefore, there is no need to focus on these attributes in diagram IV. The result of the

analysis shows that there are 4 attributes in quadrant IV, of which 1 attribute is in performance dimension, 2 attributes are in reliability dimension, and 1 attribute is in durability dimension.

All attributes in quadrant IV do not need to be improved because the performance provided is already good according to the customers. It is better if all these attributes are used to cover the flaws that exist in the quality of FOI almond milk product.

From the result of Cartesian diagram analysis that was carried out, it was found that 13 out of 27 attributes has high performance. This indicates that FOI as a new business has performed quite well and is in line with customers' expectation of the desired almond milk product. However, FOI has 3 attributes that are still considered underperformed. It is hoped that in the future, FOI can pay attention and improve the performance of these attributes.

So, it is important to pay attention to a Small Medium Enterprise to evaluate what are the advantages and disadvantages of a business. So that improvements can be made in order to meet customer desires and create a sense of customer satisfaction, because it will make customers more loyal to a brand.

4 Conclusion

According to the results of data analysis and discussion in the previous chapter, it can be concluded that there are 3 attributes whose performances must be improved, namely, texture, aroma, packaging and presentation which are not neat. Furthermore, there are 13 attributes whose performances have met customers' expectation, namely, great taste, ready-to-consume milk, very clean packaging and presentation, 100% natural ingredients, reasonable price, standards and quality as expected, taste consistency from the first day to the next 2 days (refrigerated), the content which is in accordance with its claims, very fast service, good response from the seller when there are requests from customers regarding the product, excellent treatment by the seller, good quality ingredients, and very good overall quality. Therefore, the performance of these 13 attributes must be maintained that they can be used as top product's features of FOI almond milk.

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