

Quality Evaluation of Baytat Cake for Customer Satisfaction

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ABSTRACT

Baytat cake is a traditional food of Bengkulu, resembles a pineapple pie. These products were produced by small and medium industries in Bengkulu. Various and low of quality product is still a common problem faced by producers. Evaluation of quality is required to improve product quality in order to achieve customer satisfaction. This study aimed to identification the importance of customers' voices and technical processes for baytat cake, to compare satisfaction of customer for baytat cake XYZ with competitor and to provide recommendation to improve quality baytat cake based on customers' voices. One of the tools used to solve the problem is Quality Function Deployment (QFD). In this study interviewed fifty respondents (customer, producers, workers, processing operators and traditional food researchers. The result showed that the level of importance of customers' voices about baytat cake based on 7 quality attributes, the taste of cake is the primary attribute for customer to satisfy them, followed by the taste of jam, texture of cake, price, aroma of cake, practicability of packaging, protection packaging for product and aesthetics of packaging. The importance level of technical processes that influence customers' voice of product quality are the process of baking, the process of mixing, the cooking of coconut milk, the process of giving jam and the cooling of coconut milk process. In term of product performance, based on product comparison analysis, we found that the customers much more satisfied with baytat produced by XYZ Baytat producer than the others producer. The recommendations to support quality improve of baytat cake are on the price and packaging attributes.

Key words :baytat cake, QFD, improvement quality, customers'satisfaction

INTRODUCTION

Baytat cake is one of the traditional foods that are popular in Bengkulu city. Many small and medium industries produce baytat cakes and that caused tight competition among the baytat cake industries. To overcome competition in business, each industry must be able to define customer satisfaction, not only in the matter of price but also need for improving the quality products. Hidayat (2009) described that the quality of products not only can affect customer satisfaction but can indirectly affect customer loyalty. Therefore, producers must be concern onquality product thus;customers do not switch to competitor's products. Kotler (2000) in Eliyanora *et al.* (2010), Kuo and Chen (2011) and Winarto *et al.* (2012) described that in order to achieve customer satisfaction, it is important to be able to understand expectations and customers'voices. Customer satisfaction will be achieve if the customer perceives the product in line with expectations or exceed customer expectations. Purnomo (2003), Marimin (2004) and Suryaningrat (2013) explained that Quality Function Deployment (QFD) is a systematic method for planning and evaluating customers'voicesto definecustomers' satisfaction. It can help to transform customers voice into design quality into subsystem and component parts and ultimately to specific elements of the manufacturing process. Ariani (2002) as cited by Silvia *et al.* (2010) describes that three major benefits that can be obtained when using QFD are (1) reduce costs of production because product compatible with the expectations of customers. Thus, do not need repetition production or disposal of raw materials for production that does not fit the specifications of customer; (2) increase revenues by reducing the cost of production; (3) reducetime of production.

Implementation of QFD for the evaluation and development of products has often done. For example, Silvia *et al.* (2010) to improve the quality of white sugar, Tutuhatunewa (2010) in developing products bottled water, Silvia (2013) to improve the quality of *Bleberan* dried fish, and Wulandari *et al.* (2015) in the development of red palm oil emulsion products.

This study aimed to identification the importance of customers' voices and technical processes for baytat cake, to compare satisfaction of customer for baytat cake XYZ with competitor and to provide recommendation to improve quality baytat cake based on customers' voices.

MATERIALS AND METHODS

The tools was used in this study was a questionnaire, stationery and a camera. The materials was used in this study is baytat cake. Evaluation was conducted in production unit in baytat cake XYZ and some producer baytat cake.

In this study used primary and secondary data. Primary data was collected by using the instruments: a) The interview; b) Questionnaire; and c) Observation to study location. Secondary data was collected by using the instrument: a) Study of documentation and b) Study of literature and references from books and scientific papers.

In this study, questionnaire was designed to collect data and information, such as : 1) expectations or customers' voices about baytat cake; 2) technical process for baytat cake; 3) the relationship among the technical process; 4) relationships technical process to customer expectations; and 5) the level of customer satisfaction of baytat cakes. This study interviewed 50 respondents; consist of : customers, producers, workers, processing operators and traditional food researchers. The selection of respondents used purposive sampling method to facilitate researchers in collect data.

The data were analyzed base on components in House of Quality (HOQ) as a part of QFD method. İçtenbaş and Eryılmaz (2011), the common format of HOQ is made up of six components as shown in Figure 1. These include customers' voices, technical process, correlation matrix, and technical priorities section respectively.

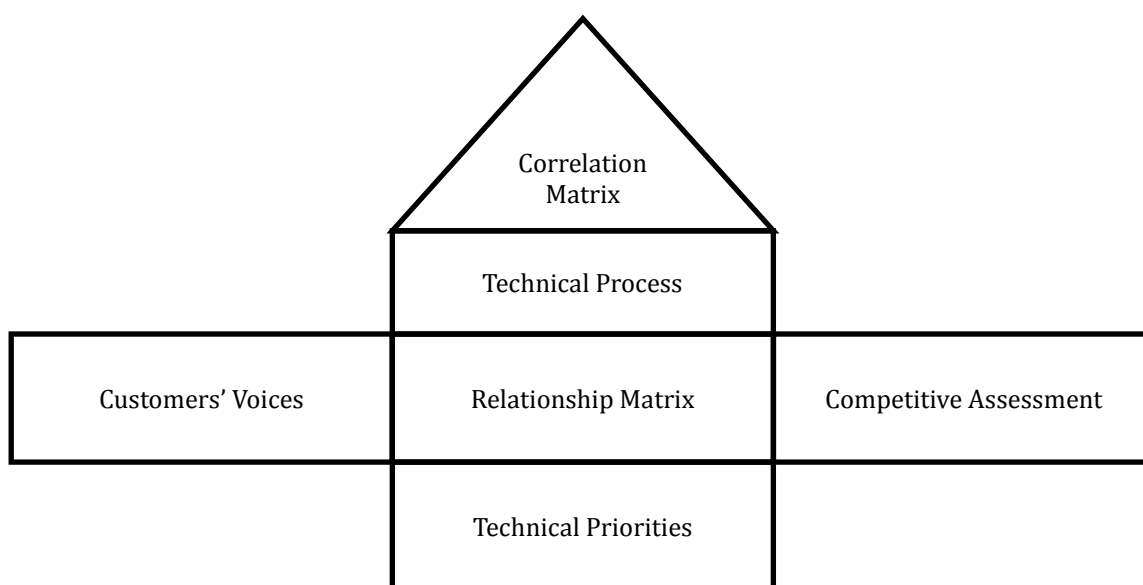


Figure 1. The House of Quality

The steps to implementation of QFD were :

Collecting the voices of customers. The voice of customers is required to begin a QFD process, which is often based on experiences with the customer or on a survey report.

Determining the priority structure of voices of customers and preparing the competitive evaluation of customers' voices. The customers play an important role in determining the relative position of the organization with respect to that of its competitors for each customer's voice.

Developing the horizontal portion of the QFD matrix is concerned with the information related to the customer. The list of customers' voices, priority rating and competitive assessment of customers voices are occupied with proper order in this customer portion.

Developing the technical (vertical) portion of the QFD matrix. Once the customers voices were identified, inter-relationship for customers voice and technical process were established, which were placed at the middle of the technical portion of the QFD matrix. The co-relationship of the technical process can be examined. The objective is to highlight any requirements that are in conflict with each other. The triangular portion accommodates these co-relations, which gives the overall QFD matrix the

appearance of a rooftop. Column weights can be calculated, by using the customers importance level in conjunction with weights assigned to the relationship symbols. The results number provides a method of judging the relative importance of each of the technical process. These column weights are entered at the bottom of the technical portion of the QFD matrix.

Analyzing the QFD matrix once it is completed. The team focus should be made on the appropriate technical process to obtain the complete satisfaction of customers' voices in order of final ranking. To fulfill each technical process, all the necessary steps are analyzed and implemented.

This study consists of three attributes of the voices of customers, and consists of:

Physical Products; is anything that can be offered to the market to get the attention, purchased (owned), used, or consumed which can satisfy the desire or need (Kotler and Armstrong, 2001) and (Saladin, 2002). Parameters observed: a) Aroma; b) Taste of cake; c) Taste of jam; and d) Texture of cake.

Packaging; Physical wrapper product packaging is to protect the product and at the same time creating a unique identity (Tjiptono, 2008). Parameters observed: a) Practicality of Packaging; b) Reliability in protecting the product; and c) Aesthetics of Packaging.

Marketing; a very important factor that can influence purchasing decisions is the price factor. After developing the structure and pricing strategies, companies often face a situation where they have to change the price or respond to changes in price competition is doing. According Lupiyoadi (2001) states that determination of price strategy is very significant in providing value to customers and affects the image of the product, and the customer's decision to buy. Parameters observed: price.

RESULTS AND DISCUSSION

Identification The Importance Level of Customers' Voices

Based on the opinions of respondents, the importance level of customers voices on the bayt cake were listed in Table 1. The level of importance shows that the higher level of importance customers voices are, the more important customers voice in order to improve quality of bayt cake in achieving customer satisfaction. Table 1 shows that the level of importance which is the highest customer voices on the cake taste attributes. This is supported by Winarno (2004), that taste is an importance in judging a food product that involve the senses of taste (tongue). The taste is also very much influenced by the chemical compound, temperature, consistency and interaction with constituents of foods such as protein, fats, vitamins and many other components.

Table 1. Assessment Importance of Customers' Voices

No	Customers' Voices	Weight	Rank	Level of Importance
Physical Products				
1	Aroma of Cake	77	5	4
2	Taste of Cake	303	1	8
3	Taste of Jam	257	2	7
4	Texture of Cake	159	3	6
Packaging				
1	Practicality of Packaging	40	6	3
2	Reliability in Protecting Product	36	7	2
3	Aesthetic of Packaging	34	8	1
Pemasaran				
1	Price	93	4	5

(Source: Zikrullah, 2015)

Determination The Importance Level of Technical Processes

Technical processes of bayt cake consists of (Faryantoni, 2015) : 1) The cooking of coconut milk; 2) The process for cooling coconut milk; 3) The mixing process; 4) The process for giving jam; and 3) The baking process. The level of importance the technical process and the relationship among the voices of customers with the technical process can be seen in Table 2.

Based on Table 2, it is known that the technical process that most affect the quality of the cake is in the baking and the mixing process. These processes are considered highly contribution to the formation of the cake aroma, taste cake, and texture of the bayt cake.

Table 2. Assessment Importance of Process Technical

No	Customers' Voices	Cooking	Cooling	Mixing	Giving Jam	Baking
1	Aroma of Cake	○	Δ	○	○	●
2	Taste of Cake	○	Δ	●	Δ	○
3	Taste of Jam	Δ	Δ	Δ	○	○
4	Texture of Cake	○	Δ	●	Δ	●
Level of Importance		97	25	167	69	175

Source: Zikrullah (2015). Note: Δ = The relationship is weak, ○ = Relationship is Average, ● = Relationships is Strong

According Halimahtussahdiah (2014) explained that high temperature (such as baking process) causes protein in foods undergo denaturation, causing changes in the texture of the food. Besides, materials selection and appropriate dose on the mixing process greatly affect the formation of aroma, taste and texture of food. The use of proteins and fats (such as egg, coconut milk, etc.) can improve the taste, color, structure, texture and volume of cake. Widowati (2003), stated that giving eggs can improve the nutritional value, color poster and as an emulsifier because it contains lecithin. Faridah *et al.*, (2008) explained that the use of sugar with the right dose also affects the taste of the cake. Sugar also serves to provide a sweet taste, form the cake structure, improve the texture and tenderness, extends freshness by binding water and stimulate the formation of a good color. The sugar can also function as a preservative because sugar can reduce aw foodstuffs that can inhibit the growth of microorganisms.

Comparison of Customer Satisfaction for Product XYZ with Competitors

Comparison of customer satisfaction for product xyz with competitors can be seen in Table 3. Table 3 showed that baytat cake was produced by industry “XYZ” considered satisfactory on aroma of cake, taste of cake, taste of jam, texture of cake, practicality of packaging and aesthetic of packaging attributes. While reliability in protecting the product attributes and the price attributes was rated only satisfactory. The level of customer satisfaction with baytat cake “XYZ” that is superior to the competitors on the cake aroma attributes and aesthetic packaging. But overall, cakes baytat “XYZ” have been able to satisfy customers.

Table 3. Satisfaction of Customers in Baytat Cake “XYZ” Compared to Competitor

No	Customers' Voices	XYZ	ABC	EFG
1	Aroma of Cake	4	3	3
2	Taste of Cake	4	4	3
3	Taste of Jam	4	4	3
4	Texture of Cake	4	4	3
5	Practicality of Packaging	4	4	3
6	Reliability in Protecting Product	3	3	3
7	Aesthetic of Packaging	4	3	3
8	Price	3	3	4

Source: Zikrullah (2015)

Recommendation of Product Improvement

Providing recommendation to improve quality product development refers to ratio improvement of product. Ratio improvement showed the effort required to improve the attributes in order to achieve the target. Table 4 showed that the attributes that need to be improved are price and reliability in protecting the product. This is due to the respondents assess the price of baytat cake ‘XYZ’ is still quite expensive compared with competitors, especially baytat cake “EFG”.

While on the packaging reliability attributes, respondents needed innovations in packaging in order to increase the shelf life of the product. Because so far, most of the industries baytat cakes use plastic PS (Polystyrene) as the primary packaging and cartons with a thickness of 0.05 mm as secondary packaging. According to Rosalina and Silvia (2015), PS plastic has great permeability of water vapor and oxygen so that the product is easy to damaged.

For more details of all the relationships among the attributes of quality products with technical process were presented in the matrix of HoQ (House of Quality) baytat cake in Figure 2.

Table 4. Ratio Improvement Products

No	Consumer's Expectation	Customer Satisfaction in Product XYZ	Goal	Ratio Improvement Products
Physical Products				
1	Aroma of Cake	3	4	1,00
2	Taste of Cake	4	4	1,00
3	Taste of Jam	4	4	1,00
4	Texture of Cake	4	4	1,00
Packaging				
5	Practicality of Packaging	4	4	1,00
6	Reliability in Protecting Product	3	4	1,33
7	Aesthetic of Packaging	4	4	1,00
Pemasaran				
8	Price	3	4	1,33

(Source: Zikrullah, 2015)

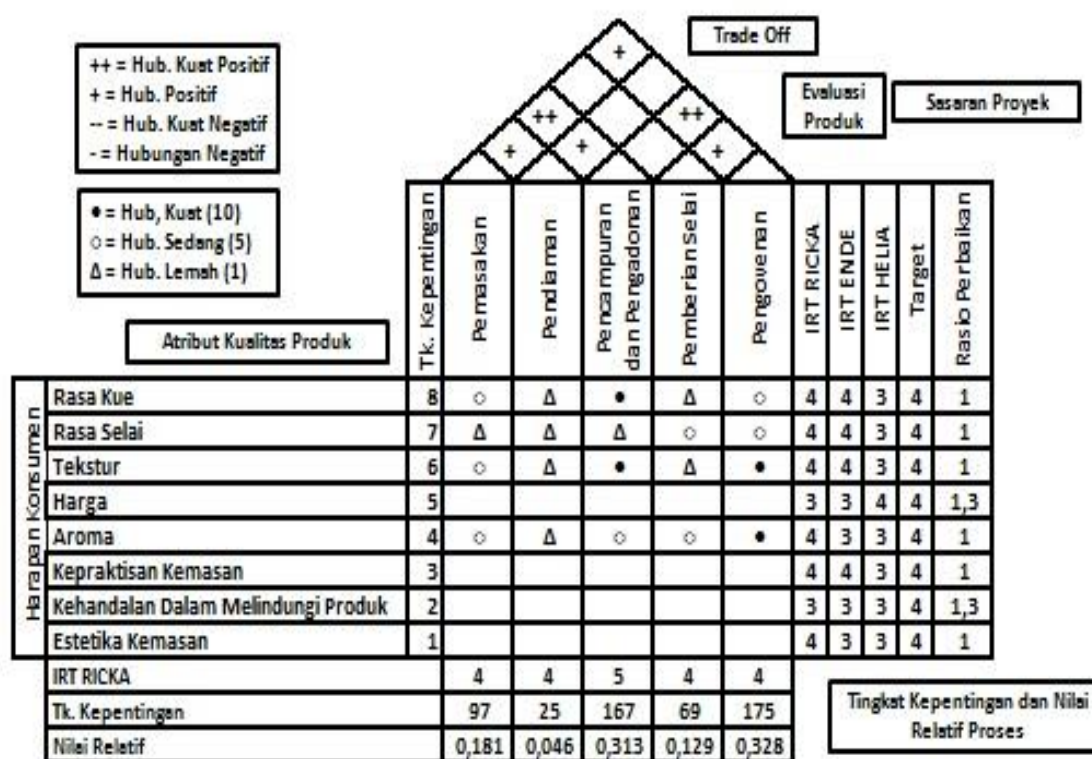


Figure 2. House of Quality of Baytat Cake

CONCLUSIONS

Based on the research that has been done can be concluded as follows:

The importance level of customers' voices that affect the quality of baytat cake are the taste of cake as the primary attribute, followed by taste of jam, texture of cake, price, aroma of cake, practicality of packaging, reliability in protecting the product and aesthetic of packaging attributes. The importance level of technical processes that influence customers' voice of product quality are the process of baking, the process of mixing, the cooking of coconut milk, the process of giving jam and the cooling of coconut milk process. The level of customers' satisfaction with cake baytat XYZ industry that is superior to the competitors on the cake aroma and aesthetic packaging attributes.

The recommendations to support quality improve of baytat cake are on the price and packaging attributes.

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