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Analysis of Product Quality on the Food Processing Sector based on the Consumer Evaluation Criteria (Study on product Tempe Pejeruk Abian, Mataram City)

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Abstract

This study aims to determine the quality of SME products in the food sector which are widely spread in the city of Mataram. The research focus is on tempe products which are one of the leading products in this city. This study used a sample survey method, by selecting the Pejeruk Abian Tempe industry center as a research location. The research population was all tempe consumers who came to buy at the center, or consumers elsewhere who bought Pejeruk Abian tempeh. In determining the respondents as data sources in this study, researchers used a purposive sampling technique. Because the number of members of the study population is not known with certainty, the number of research samples is determined by 100 respondents. To answer the problems posed, the analytical tool used is the Ideal-Point Model, namely the consumer's evaluation of what is felt and what is desired. This model measures the difference between what consumers feel and what consumers want. The results showed that the product quality of Tempe Pejeruk Abian UKM, Mataram city was very good. This is indicated by the quality value being in the upper interval class, which means that the quality of the tempe product is in accordance with the wishes of consumers. Based on the Islamic view, respondents perceive tempe products produced by Pejeruk Abian Tempe UKM as products with halal ingredients, good processes, and are a valuable and useful offer.

Keywords: Quality, Food Sector, Tempe, Economy, Islam.

1. Introduction

Today Small and Medium Enterprises (SMEs) plays an important role as a buffer for the national economy. This is because SMEs open up greater employment and business opportunities. Small business such as food processing has contributed to the national economy with the ability of this sector to absorb labor and the resulting production value. The three sub-sectors that contribute the largest production value in the food processing industry are the food, beverage and tobacco sectors.

One of the SMEs in the food sector is the tofu industry Tempe is generally small and medium scale. The Central Statistics Agency (BPS) recorded that the average per capita consumption of tofu and tempeh in Indonesia is 0.304 kilograms per week in 2021. This figure has increased by 3.75 % compared to the previous year which was 0.293 kilograms per week.

Consumption of tofu and tempeh will affect the viability of the soybean processing business. The city of Mataram has made tofu and tempeh one of its superior products, has several areas that are centers for soybean-based food processing industries, one of which is tempe production located in the Abian oranges. The tempe produced have gone through quality control routinely carried out by BPOM Mataram, to ensure that the tempe produced is safe for health, free from harmful chemicals such as borax, formalin, and so on.

Research on product quality is very important to help companies find out what they want and maintain the trust that has been instilled in their consumers so far. According to Sumarwan (2003: 123), consumers have a desire for a product in accordance with the knowledge they have, so it is hoped that the product can provide benefits for consumers. If the product

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consumed is in accordance with what the consumer wants, the consumer will make a purchase so that it can provide benefits for producers or marketers.

Product quality is an important aspect to be considered by tempe producers. Tempe quality that meets consumer expectations will help increase sales, and at the same time maintain the continuity of tempe production in the future, which is a source of livelihood for some people. Based on this background, the researcher is interested in presenting the results of the study entitled "Analysis of Superior Product Quality in the Mataram City Food Processing Sector according to Consumer Evaluation Criteria (Study on MSME Tempe Pejeruk Abian Products).

2. Literature Review

2.1. Product Quality

Product quality is the physical condition, function and characteristics of a product, both goods and services based on the expected quality level, such as durability, reliability, accuracy, ease of operation, product repair and other product attributes with the aim of meeting and satisfying the needs of consumers or customers.

Product quality is an important thing that must be sought by every company if the resulting product is to be competitive in the market. The existence of a reciprocal relationship between companies and consumers will provide an opportunity to know and understand what the needs and expectations are in consumer perceptions. Thus, product provider companies can provide good performance to achieve consumer satisfaction by maximizing pleasant experiences and minimizing unfavorable consumer experiences in consuming products.

The following are definitions and definitions of product quality from several book sources:

- 1. According to Kotler and Armstrong (2012), product quality is the ability of a product to perform its functions, this includes overall durability, reliability, accuracy, ease of operation and product repair, as well as other product attributes.
- 2. According to Nasution (2005), product quality is a dynamic condition related to products, people/labor, processes and tasks, and the environment that meets or exceeds consumer expectations.
- 3. According to Tjiptono (2012), product quality is the level of quality expected and control of diversity in achieving that quality to meet consumer needs.
- 4. According to Prawirosentono (2002), product quality is the physical state, function and characteristics of a product concerned that can satisfy the tastes and needs of consumers according to the value of money spent.
- 5. According to Kotler and Keller (2012), product quality is the ability of an item to provide appropriate results or performance even beyond what the customer wants.

2.2. Product Quality Benefits

According to Ariani (2003), there are several benefits to be gained by creating a good quality product, namely:

- 1. Improve company reputation. Companies or organizations that have produced a quality product or service will get the title as an organization that prioritizes quality, therefore, the company or organization is known by the wider community and gets more value in the eyes of the public.
- 2. Lower costs. To produce a quality product or service, a company or organization does not need to pay high costs. This is because the company or organization is oriented towards (customer satisfaction), namely by basing the type, type, time, and number of products produced in accordance with the expectations and needs of consumers.
- 3. Increase market share. Market share will increase if cost minimization is achieved, because organizations or companies can reduce prices, although quality remains the main priority.
- 4. International impact. If you are able to offer a quality product or service, then apart from being known in the local market, the product or service will also be known and accepted in the international market.
- 5. There is product responsibility. With increasing competition for the quality of products or services produced, organizations or companies will be required to be increasingly responsible for the design, process and distribution of these products to meet consumer needs.
- 6. for product appearance. Quality will make a product or service known, in this case the company that produces the product will also be known and trusted by the wider community.
- 7. Manifest quality that is perceived as important. Competition which is currently no longer a matter of price but product quality, this is what encourages consumers to want to buy products at high prices but with high quality as well.



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2.3. Product Quality Dimensions

According to Gaspersz (2008), the dimensions of product quality are as follows:

1. Performance

Performance is the main operating characteristic of the core product and can be defined as the performance of an actual product. The performance of a product is a reflection of how a product is presented or displayed to consumers. The level of performance measurement basically refers to the level of the basic characteristics of the product in operation. A product is said to have good performance if it can meet expectations. For each product/service, the performance dimension can be different, depending on the functional value promised by the company. For the food business, the performance dimension is good taste.

2. Reliability

Reliability is the level of constraints of a product or the consistency of the reliability of a product in its operational processes in the eyes of consumers. The reliability of a product is also a measure of the probability that a product will not be damaged or fail within a certain period of time. A product is said to have high reliability if it can attract the trust of consumers regarding the quality and reliability of a product. The dimensions of performance and reliability at first glance are almost the same but have clear differences. Reliability shows the probability of the product carrying out its function.

3. Feature

Features are secondary or complementary characteristics and can be defined as the degree of completeness of the attributes present in a product. At some point, the performance of each brand is almost the same, but the difference lies in the features. This also results in consumer expectations of relatively homogeneous performance dimensions and relatively heterogeneous expectations of features.

4. Compliance with Specifications (Conformance to Specifications)

Conformance is the extent to which design and operating characteristics meet predetermined standards and can be defined as the degree to which all units produced are identical and meet the promised target specifications. The definition above can be explained that the conformance level of a product is said to be accurate when the products marketed by the manufacturer are in accordance with the company's plan, which means that they are the products that the majority of consumers want.

5. Durability

Durability is related to how long the product can continue to be used and can be defined as a measure of the expected operating life of the product under normal conditions. This dimension includes technical age and economic age. The greater the frequency of consumer use of the product, the greater the durability of the product.

6. Service Ability

The ability to serve includes speed, competence, convenience, easy repair, and satisfactory complaint handling and can be defined as a measure of the ease of repairing a damaged or failed product. This means that if a product is damaged or fails, then the readiness to repair the product can be relied upon, so that consumers do not feel disadvantaged.

7. Aesthetics

Aesthetics is the beauty of a product to the five senses and can be defined as the attributes attached to a product, such as color, model or design, shape, taste, aroma and others. Basically aesthetics are elements that complement the basic functions of a product so that the performance of a product will be better in front of consumers.

8. Perceived Quality

Perceived quality is the consumer's perception of the overall quality or superiority of a product. Usually due to the buyer's lack of knowledge of the attributes or characteristics of the product to be purchased, the buyer perceives its quality from the aspects of price, brand name, advertising, company reputation, and the country of manufacture.

2.4. Product Quality Levels

According to Arif (2012), there are five levels in product quality, namely:

1. Core benefits. That is the actual core service or benefit that is purchased and obtained by consumers. The most fundamental consumer needs are benefits, and this is the most fundamental level of a product. A marketer must be able to see himself as someone who provides benefits to consumers. So that consumers will ultimately buy these products because of the core benefits contained in them.



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- 2. Basic product. The next level a marketer must be able to change the core benefits into basic products. At the core of the product are the benefits of the basic form of the product or being able to fulfill the basic functions of the product that consumers need is functional.
- 3. Expected product. Is a set of conditions that are expected and liked, owned by the product attribute. Consumer need is eligibility. For example, in hospitality services, the consumer's hope is the comfort of resting and eliminating fatigue from all the activities that have been carried out.
- 4. The augmented product. That is one of the benefits and services that can differentiate these products with competitors. Consumer needs are satisfaction. For example, banking provides a planned savings product, in which the customer can save and invest their funds and at the same time get life and health insurance coverage by paying a certain additional premium. The advantages of the product offer are what customers are looking for.
- 5. Potential product. This means what are the future expectations with these products if there are changes and developments in technology and consumer tastes. Consumer needs are the future of the product. For example, the convenience of paying telephone, electricity, water or other bills.

2.5. Product Quality Perspective

The product quality perspective is a consumer's perception of the overall quality or superiority of a product or service with the intention expected or desired by the consumer. According to Tjiptono (2012), there are five types of product quality perspectives, namely:

1. Transcendental approach

Quality in this approach can be felt or known but difficult to define and operationalize. This point of view is usually applied in music, drama, dance, and fine arts. In addition, companies can promote their products with questions such as a fun place to shop (supermarkets), elegant (cars), facial beauty (cosmetics), skin softness and smoothness (bath soap), and others. Thus the planning, production and service functions of a company are very difficult to use this definition as a basis for quality management.

2. Product-based Approaches

This approach considers quality as a characteristic or attribute that can be quantified and measured. Differences in quality reflect differences in the amount of some of the elements or attributes that the product has. Because this view is so objective, it cannot explain differences in individual tastes, needs, and preferences.

3. User-based Approaches

This approach is based on the premise that quality depends on the person looking at it, and the product that satisfies someone's reference the most (eg perceived quality) is the highest quality product. A subjective and demand-oriented perspective also states that different customers have different needs and desires, so that quality for someone is the same as perceived maximum satisfaction. Someone's satisfaction will certainly vary as well, as well as one's view of the quality of a product will definitely have different views. A product that can fulfill one person's desires and satisfaction, may not necessarily be able to fulfill the satisfaction of others.

4. Manufacturing-based Approach

This perspective is supply-based and is primarily concerned with engineering and manufacturing practices, and defines quality as meeting requirements. In the service sector, it can be said that quality is operation-driven. This approach focuses on customizing internally developed specifications, often driven by the goal of increasing productivity and reducing costs. So what determines quality is the standards set by the company, not the consumers who use it.

5. Value-based Approach

This approach views quality in terms of value and price by considering the trade-off between performance and price, quality is defined as affordable excellence. Quality in this perspective is of relative value, so a product that has the highest quality is not necessarily the most valuable product. However, the most valuable is the most appropriate product or service purchased.

3. Research Methods

3.1. Type of Research

The type of research used in this research is descriptive. This method is called descriptive because this method focuses on a step of solving current or actual problems, then the data collected is first compiled, explained and then analyzed (Surakhmad, 1998: 140). The purpose of descriptive research is to make systematic, factual and accurate descriptions,



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drawings or drawings of facts, characteristics and the relationship between the phenomena being investigated. In this case descriptive research was used to get an overview of consumer evaluation of the product quality of Tempe Pejeruk Abian Mataram City.

3.2. Research Locations

In a study of consumers of Pejeruk Tempe Tempe Abian, researchers chose 3 traditional markets as research locations/places, namely: first, Ampenan market because the location of this market is close to the tempe production center under study; secondly, the Kebon Roek market because it is a class A (large) market where sellers and buyers gather inside/out of town which is located in Ampenan; And third, the Dasan Agung market, because it is located in the middle of a settlement within the city of Mataram.

3.3. Determination of Respondents

The population in this study were all tempe product consumers who came to buy tempe in one of the three markets. The respondent determination technique used in this study was purposive sampling, namely sampling according to the research objectives. If it is seen that people who happen to be met are suitable as data sources based on the criteria in selecting respondents as follows:

- 1. Consumers who come to the tempe sales location and make purchases.
- 2. Adults, here adults are categorized as aged 17 years and over or married, researchers assume respondents who are 17 years old understand the questions asked. Respondents are the decision makers in purchasing tempe.
- 3. The assumption in relation to respondents is that in making decisions consumers evaluate the attributes contained in tempe products.

Because the number of members of the study population is not known with certainty, it is determined that the sample taken for the study is 100 people. This number has fulfilled the minimum number of samples, namely between 30 and 500 as stated by Roscoe in Wibisono (2003: 55). Determining the sample size is also in accordance with the opinion of Guilford (1987: 125) which states that the research sample includes a number of elements (respondents) that are larger than the minimum requirement of 30 elements or respondents.

3.4. Data Analysis Procedures

According to Sumarwan (2003: 164), to determine consumer attitudes towards products, an ideal -point model can be used . In principle, the ideal number model provides information about consumer evaluations of what consumers feel and what consumers want (ideal). This model measures the gap (difference) between the ideal and what consumers actually feel.

The analytical procedures used in the study are as follows:

- 1. To find out consumer confidence in tempe products, consumers are asked to provide an assessment of the attributes as they actually feel.
- 2. To find out the ideal characteristics that consumers want for tempe products, we use an analysis of the quality of the i deal, namely the expectations/desires of consumers for the attributes of tempe products. Each consumer has the ideal nature of the product according to their respective desires. The ideality of tempe products is assessed by looking at the point difference between ideal performance and trust in tofu attributes. According to Sumarwan (2011: 181), the smaller the difference or difference between what is expected (the ideal) and the actual quality, the better.

4. Results and Discussion

The research was conducted on SMEs that produce tempeh in the Pejeruk Abian production center, a neighborhood located in the Pejeruk Village, Mataram City. This tempeh business is very promising, because of the large demand and large growth in demand. The production cost of making tempeh is quite affordable, in addition to the main raw material, namely soybeans, which are easy to obtain, both for local and imported types of soybeans. This type of local soybean is preferred by tempe producers in this production center because it will produce a more distinctive and delicious taste of tempeh.

Research activities analyze the order of consumer interest in the attributes of tempe products. The next stage is to analyze the ideal quality that customers expect and compare it with the perceived reality. The last is to analyze the value of the gap that exists in the quality of tempe products.

4.1. Analysis of Consumer Interests Buying Tempe in General



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Consumer interests are consumer statements regarding the order of importance of an attribute attached to tempe products. The consumer's decision to buy a product before will consider these attributes according to their interests. The attributes attached to tempeh will be an attraction for consumers to make purchases.

In this study there were 7 (seven) attributes that were measured, namely price, taste, color, aroma, shape, texture, and nutritional content. Data collection using a questionnaire instrument was carried out in June-July 2022. The following describes the interests of consumers when purchasing tempeh products.

No.	Attribute	ST (1)	TP (2)	C (3)	PT (4)	SPT (5)	Total	N	Wi	ranking
1	Price			5	10	85	480	100	4.80	2
2	Taste			2	8	90	488	100	4.88	1
3	Color			15	11	74	459	100	4.59	6
4	Aroma			7	13	80	473	100	4.73	3
5	Form			17	10	73	456	100	4.56	7
6	Texture			10	13	77	467	100	4.67	4

Table 1. Consumer Interest in Tempe Product Attributes in General

Source: primary data processed

Nutrient content

The results showed that respondents purchased the highest tempeh product because of the taste with an importance level of 4.88, followed by the price attribute with an importance level of 4.80 and an aroma attribute of 4.73. While the attributes of texture, nutrient content, color, and shape attributes each rank 4, 5, 6, and 7 with a value of 4.67; 4.60; 4.59; and 4.56.

10

75

460

100

4.60

5

15

The attribute that is the main consideration for consumers buying tempeh is taste. The taste of tempeh that consumers like is the savory taste of tempeh. The next attribute that consumers consider is price. The affordable price of tempeh is the next main interest. This price is related to the quality of soybean raw materials, local raw materials are generally better than imported soybeans.

The third attribute is scent. The role of aroma in tempe products is very important because it also determines consumer acceptance of the product. The aroma of tempeh is not only determined by one ingredient component but is a combination of the ingredients that make it up.

The next attribute to be considered by consumers is texture. The texture of tempeh which is soft, chewy, not too soft or hard, is what attracts consumers to buy tempeh products.

Nutritional content is the next consumer consideration. The nutrients contained in these products are very high vegetable protein. However, consumers place this attribute in fifth place.

Product color and shape are the sixth and seventh attributes that consumers consider when buying tempe. These two attributes are standard for tempeh in general, which is white to yellow in color and has a rectangular shape. That is why consumers think that the two attributes are not the main consideration for buying tempeh products.

4.2. Analysis of Consumers' Ideal Quality in Abian Orange Tempe Products

Analysis of the ideal quality of a product is used to measure the extent of the gap between the ideal characteristics desired by consumers and the reality that exists in a product. Analysis of the ideal quality of Abian Pejeruk Tempe is intended to describe whether the attributes attached to the product are appropriate or not in accordance with consumer desires. Analysis of the quality of Pejeruk Abian tempeh can be seen in the following table.



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Table 2. Ideal Quality Value of Abian Orange Tempe

No	Attribute	Ideal	Reality	Gaps
1	Price	4,41	4.09	0.32
2	Taste	4,31	3.93	0.38
3	Color	4.55	3.70	0.85
4	Aroma	4.52	3.80	0.72
5	Form	4.55	4,10	0.45
6	Texture	4.50	3.90	0.60
7	Nutrient content	4,25	4,12	0.13

Source: primary data processed

From the table above it can be seen that the consumer's ideal quality of the attributes of Pejeruk Abian tempe. Attributes that best match consumer desires are nutritional content, followed by price, taste, and shape. While the attributes of texture, aroma, and color are not ideal or do not meet consumer desires.

The nutritional content attribute is the attribute that best fulfills the consumer's ideal characteristics with the smallest difference in value, namely 0.13. This means that the nutritional content is in accordance with their wishes, however, the nutritional content is not a top priority for consumers' considerations when purchasing a product, but only the fifth order.

The second attribute that fulfills the ideal or fulfills consumer desires is price, with a value difference of 0.32. Consumers think that the price of tempeh is still affordable and in accordance with consumers' purchasing power.

The next attribute is taste, which also fulfills the consumer's ideal characteristics. The difference in value between the ideal and the reality of the product is 0.38. This shows that the taste attribute has met the ideal characteristics or is in accordance with the wishes of consumers. Consumers think that Pejeruk Abian Tempe has a distinctive and savory taste. Taste is the main consideration factor for consumers to buy tempeh products.

The next product attribute that meets the ideal characteristics for consumers is form. The form of tempe has fulfilled the ideal characteristics according to consumers. The difference in value between the ideal and the reality of the product is 0.45. Even so, the shape of tempeh is not an important factor for consumers to consider when purchasing the product, but is the final consideration factor.

Attributes that do not meet the ideal characteristics for consumers are the texture, aroma, and color of the product. The difference between the ideal and the reality for each attribute is 0.60, 0.72 and 0.85. Consumers argue that they prefer tempeh which has a chewy and soft texture, as well as a delicious aroma which influences the taste of tempeh. Consumers also want tempeh products that do not use artificial (chemical) dyes, and if necessary add color variations using natural dyes. At this time, Abian Orange Tofu products do not use artificial coloring and preservatives.

4.3. Quality of Abian Orange Tempe Based on Consumer Evaluation Criteria

Marketers must be able to know consumer tastes which are reflected in their assessment of the products they use. This research has observed how consumers evaluate products based on their evaluation criteria so that the response that appears is in the context of liking or disliking the product.

The closer a product is to the ideal, the better it is positioned. In the Pejeruk Abian Tempe product, various attributes become consumer evaluation criteria when making a purchase such as price, taste, color, aroma, shape, texture, and nutritional content. Analysis of product quality can be seen in the following table.



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Table 3. Abian Orange Tempe Product Quality

No.	Attribute	Interest	gaps	Quality
1	Price	4.80	0.32	1,728
2	Taste	4.88	0.38	1.5844
3	Color	4.59	0.85	3.9015
4	Aroma	4.73	0.72	1,842
5	Form	4.56	0.45	2,052
6	Texture	4.67	0.60	2.0081
7	Nutrient content	4.60	0.13	0.548
	Amount			13,764

Source: primary data processed.

From the table above, it is known that the total quality value is 13.764, which means that consumers assess the quality of Pejeruk Abian tempeh to be relatively very good. The high quality value is a reflection that the quality of the tempe is very good and has fulfilled their wishes. The quality value is in the highest interval class, namely 0 < Ab < 22.56 (very good), meaning that the quality of Tempe Pejeruk Abian product, Mataram city is very good or in accordance with consumer wishes.

4.4. Discussion

The results showed that respondents purchased the highest tempeh product because of the taste with an importance level of 4.88, followed by the price attribute with an importance level of 4.80 and an aroma attribute of 4.73. While the attributes of texture, nutrient content, color, and shape attributes each rank 4, 5, 6, and 7 with a value of 4.67; 4.60; 4.59; and 4.56. From the data analysis it can also be known about the consumer's ideal quality of the attributes of Pejeruk Abian tempeh. Attributes that best match consumer desires are nutritional content, followed by price, taste, and shape. While the attributes of texture, aroma, and color are not ideal or do not meet consumer desires.

Quality measurements found that the total value of quality is at magnitude 13.764. This figure shows the position of consumer perceptions on the overall product quality of Abian Pejeruk Tempe. The quality value is perceived very well by consumers because it is in the interval 0 < Ab < 22.56. In other words, the quality of the Pejeruk Abian Tempe product, the city of Mataram is very good or in accordance with the wishes/expectations of consumers.

5. Conclusions and Recommendations

5.1. Conclusion

The conclusions that can be drawn from this research are:

- 1. Attributes in the product that are in accordance with consumer desires are nutritional content attributes, followed by price, taste, and shape, while the texture, aroma, and color attributes are not ideal or do not meet consumer desires. Attributes that are considered by consumers when purchasing tempe produced by Pejeruk Abian UKM are taste, followed by price, aroma, texture, nutritional content, color, and lastly are shape attributes. The quality of the tempe is relatively very good, which is shown in the high total quality value. This means that the tempe product produced by UKM Pejeruk Abian is in accordance with the wishes of consumers.
- 2. In the view of Islamic economics, tempe products produced by SMEs in Pejeruk Abian are in accordance with Islamic teachings, product quality as measured by the attributes attached to the product is perceived very well by



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customers. Products are made from halal materials with good processes, offered to consumers with valuable and useful offers.

5.2. Suggestion

Attributes that are in accordance with the wishes of consumers should be maintained by maintaining input quality, good processes, and post-production product quality so that they can deliver valuable and useful products to consumers.

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