THE EFFECT OF PRODUCT QUALITY TOWARDS CUSTOMER SATIFICATION IN PT. MATAHARI SAKTI TULUNGAGUNG

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Abstract: Every company in every sector in this world is struggling to keep their existence and leading in the market including keeping the market notice them, satisfied toward the usage their product. This study would like to convey the influence of product quality towards customer satisfaction in PT. Matahari Sakti Tulungagung. By involving 54 customers, the collection data is accomplished using questionnaire. The data processing is established by using simple linear regression models. The result is that, if there is no influence from product quality, the customer’s satisfaction value is too low i.e. 20.118 (or 2.0118). then, the influence rate of product quality towards customer satisfaction is about 0.553. This influence is significant due to the significant value of t value is less than 5%, i.e, 0.000 by t value is 5.884. The result of this study also reveals that the ability of quality product to predict customer satisfaction is only 40%, while, the 60% of customer satisfaction is predicted other factors that are not used in this model. The result of correlation analysis partially shows that the elements of product quality which have positive and significant correlation are the aroma or smell of feed, the availability of product needed by customers, product condition when accepted by customers, the color of pellet, the semeness in pellet size, and the accuracy in n quantity of pellet, while the other elements of product quality such as product impact on fish growth, FCR (Feed conversion rate), the pollution level towards environment (pond), and the packaging do not correlation is the aroma or smell of feed that is 0.632 and significant on 0.000

Keywords: product quality, customer satisfaction, simple linear regression model.

BACKGROUND

The development in subsector aquaculture as the integral part of agriculture development cannot be separated from the development of global economy, so the program of national development should be able to hold the significant role to support the efficient, effective, and strong aquaculture. In which, it can be proven by its ability in increasing the welfare and autonomous of farmer/fisherman and also its ability in supporting the related sector.
Indonesia have the great ocean wealth with the width of about 5.8 million km² and 81,000 km seashore. Beside rely on the great potential of it naturally, Indonesia has been developing it for: (1) Natural aquaculture in the common waterworks about million hectares with production potential 0.9 million ton per year; (2) The sea cultivation that consists of seafish, molusks (shells, sea cucumber, pearl), and seaweed; (3) the brackish cultivation; (4) the fresh water cultivation, pond, and water field; (5) The development of biotechnology in marine sector such as natural feed, fish and shrimp seed, and food and food industry (Dinas Kelautan dan Perikanan, 2005).

Those great potential of marine encourages Indonesia to accomplish the development of aquaculture is in the constant value. The growth of aquaculture cultivation production would achieve about 40% per year in periods 2007-2009. (TROBOS, Special Edition, August, 2007). Yet, until now, the cultivation aquaculture in Indonesia which has been cultivated intensively just 60%, the other is still cultivated traditionally without feed giving (TROBOS, Special Edition, August, 2007).

One of aquaculture commodities that would be cultivated intensively in freshwater in freshwater is catfish. The cultivation production achievement of catfish is 86.55% in 2005 (the target was 80,000 ton, yet the achievement was 69,386 ton) and 99.12% in 2006 (the target was 95,000 ton, yet the achievement was 94,160 ton) (TROBOS, Special Edition, August, 2007). Then, the target area of catfish in 2007 is 1,575 hectares, in 2008 will be 1,930 hectares, and in 2009 will be 2,969 hectares (TROBOS, Special Edition, August, 2007).

Based on the development of the cultivation aquaculture, the feed fish industry is also has the opportunity to develop its production. Yet, it still have some challenge in sales, primarily, about the price due to the farmers has many barriers in establishing the cultivation aquaculture, especially to fulfill the expenses and to protect the fish from disease (TROBOS, Special Edition, August, 2007). Therefore, there must be the way to solve those problem, such as, to produce the feed in high quality and low price. The prices of catfish pellet which has been determined by PT Matahari Sakti during this time are Rp.7,900/kg for fry, Rp.4,860/kg for teenager, Rp.4,600/kg for adult.
Facing the problem above, actually, Indonesia has been following the International Quality Standart, in which one of the target is about the monitoring in feed usage that must be free from antibiotics, due to the sources of antibiotics contamination is from feed. Hence, the feed fish industry in Indonesia must fulfill many requitments of pelet production in order to be able to produce the qualified and safe feed fish.

By producing the qualified feed fish it will be able to face the competiton in the same type of industry, because nowdays, the competition among firms in Indonsia is very tight. This competition makes the firms must to be implement the appropriate marketing strategy in order to get consumers. There are many factors that affect the success of marketing activity they are, product quality, price policy, service, right delivery, and the way to market those products. Futhermoer, in the following purchse, customers will chosee the goods or services that give them satisaftion, so there will be repurchasing for the goods or services.

Customer satisfaction is a critical concept in marketing through and consumer research. It is generally argued that if customers are satisfied with a product, service or a brand, they will be more likely to continue to purchase it and will more likely switch products or brands and complain to manufacturers, retailers and other customers. Hence, customer satisfaction must be maintained and increased in order to be able to create and increase the income of firms. When custoers satisfied by their purchase, they will have positive attitude for the good or services and then they will repurchase again and again.

There are many factors which lead to high levels of customer satisfaction including: (a) products and services which are customer focused and then provide high levels of value for money; (b) customer service giving personal attention to the needs of individual customers and; (c) after sales service by following up the original purchase with after sales support such as maintaenace and updating.

One of the ways to achieve customer satisfaction is by producing the good product quality. As explained by Kotlker (2000) that product is the subjective understanding of firms on anything that can be offered as the firm effort to achieve the goals through fulfilling consumer need and want, agree with the market competency and capability and purchase power. While, when the customer can fulfill their need and want, so they will be
satisfied on the product because after accomplishing purchase of good or services, consumer will use and learn about the goods or services, in which in this phase will be followed by developing of satisfaction and dissatisfaction of goods or services.

PT. Matahari Sakti Surabaya is the firm manufactures fish feed. It has been developing broad and always attempt to fight in the tight competition in the fish feed industry. To face the competition, PT Matahari Sakti has been establishing marketing strategies such as product development, developing price and payment policy, developing marketing strategy based on customer oriented, and others. In this research, researcher select Tulungagung regency as the location of the study due to currently, PT Matahari Sakti oversupply of catfish Jumbo in Tulungagung. Beside, three had also have strong competitive between inter aquaculture industry in order to increase their sales volume and take over other customers.

Related to the production of catfish pellet, especially for clarias gariepinus, during this periods, PT Matahari Sakti has been always attempting to follow the National Standart of Indonesia. By following the standart determined by goverment, PT Matahari Sakti can retain its customers.

Based upon the explanation above, in this study, the researcher would like to try conveying the affect of product quality towards customer satisfaction in PT Matahari Sakti Tulungagung.

Statement of Problem

The statement of problem of this study are:

How is influence of product quality towards customer satisfaction in PT Matahari Sakti Tulungagung?

Objective of the Research

The objective of this research is to convey the influence of product quality towards customer satisfaction in PT Matahari Sakti Tulungagung. By the improvement product quality, PT Matahari Sakti can increase the customer satisfaction in which when the customer feel satisfied he/she can repurchase and/or even recommends other people to buy
the product. Therefore, it will increase the sales of product and finally will increase the firm profitability.

**Literature Review**

Research was accomplished Djati dan Darmawan (2005): pengaruh kerja karyawan terhadap kepuasan, kepercayaan, dan kesetian pelanggan (The Affect of Employee Performance toward Customer Satisfaction, Trust, and Loyalty). By using Structural Equation Model (SEM), thus research shows that there are relationship between employee performance and customer satisfaction and this satisfaction will affect towards customer trust and loyalty.

Research was accomplished Ferinadewi (2005): atribut produk yang dipertimbangkan dalam pembelian kosmetik dan pengaruh pada kepuasan konsumen di Surabaya (Attributes Related to Product Considered by Customer in Cosmetics Purchase and the Impact On Customer Satification). The results are used in gap analysis to evaluate customer satification. This study also conducted factor analysis and use its result simple regression to find out the effect of each factor to overall satisfication. As a result, there are factors which consumer perceived as the most important attributes which are quality, risk, and brand. Quality and brand factor both influencing overall customer satisfication in cosmetics consumption greater then risk factor.

**Product Quality**

Product quality is one of the ways to win the competition because it create the competitive advantage for firms. Kotler (2001) defines product as anything that can be offered to a market for attention, acquisition, use, or consumption that might satisfy a want or need. So, in this context, consumers spend their mony, time, and energy to give attention, get, and use a product with the expectation in getting satisfaction. According to Solomon (2000) product is a tangible good, service, idea or same combination of there that satisfies consumer or business customer needs through the exchanges process, a bundle of attributes including features functions, benefits and uses.

In other word, it can be concluded that product is all which are offered by firms to market in order to get the attention and used by consumers to satify their need and want.
According to Hansen (2003) quality is degree of grade of excellence, quality is a relative measure of goodness. While, Goetsch (1994) defines quality as dynamic condition related to product, service, people, process, and environment that fulfill the expectation. From the definition of quality above can be concluded that quality is the ability of goods or services to satisfy customer need and want or expectation.

The definition of product quality by Kotler (2001) is that product quality means the ability of the product to perform: it includes the product’s overall durability, reliability, precision, ease of operation and repair, and other valued attributes. Some of this attributes can be measured objectively from a marketing point view. However quality should be measured in the terms of buyer’s perception.

In other word, product quality is a bundle of goods of services characteristics which have ability to fulfill consumer need that a combination of durability, reliability, precision, ease of operation and repair, and other valued attributes. In measurement of product quality, there are many opinions as the dimensions of product quality according to David Garvin and Joseph S. Martinich. According to Gavin (1998) there are eight dimension of product quality such as performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived. While Martinich (1997) identified 6 dimension of product quality, such as performance, range and type of features, reliability and durability, maintainbility and servicebility, sensory characteristics, and ethical profiole and image.

Related to this study, one of the product qualities that will be researched is to fulfill the requirements that has been determining by National Standard of Indonesia about the Pellet for Clarias Gariepinus, one of catfish type. The following table shows the quality standart that must be fulfilled by procedure of Pellet for Clarias Gariepinus. Thus are moss and plankton, that’s why the catfish cultivator usually does not have to concern much with mineral and protein. Catfish is categorized as omnivore.

Yet, fish use protein efficiently as source of energy. A higher percentage of the digested energy in protein is metabolizable in fish than in land animals or birds, which give protein a higher productive energy value fish. The optimum level of protein required for growth of fish has ranged from 25%-50% (Lovell, 1998). Fish have higher protein
requirements during early growth than during the later growth. For the catfish, the smaller channel catfish could grow as well from a 27% protein diet as well a 38% protein diet when the energy level is low, but when energy level increased, diet consumption must be high due to support its fish growth.

The general problems in mineral nutrition are formulating the mineral-free diets, overcoming tissue stores of minerals, and fish absorb dissolved mineral from the water. Yet, minerals as the elements which function as activations of enzymes and hormones for fish, so it must be considered for fish growth. That’s why even though in the water has been providing minerals, it is still neccessary to consider the mineral requirments for fish growth.

The fresh water fish can synthetize fat by itself. The fresh water fish can synthetize omega-3 EPA (eikosapentanat) and DHA (dokosahexanat) from fatty acid C18. So, actually, it does not need some fat in its feed. Yet, the fish farmer must be always get attention to the need of fat for fish due to fat is one of source of energy for fish. Beside that, fat is also needed to soluble vitamin in fat such as vitamin A, D, E and K. The minimal need in fat for carnivore fish is not more than 8% and for herbivore fish is not more than 3% (http://www.o-fish.com, 2003).

Fiber is not specific chemical compound, but a mixture of lignin, cellulose, hemicellulose, pentosans, and other components that are generally indigestible to monogastic animals, including fish. Fibler has no functional value in fish feed except possibly to control rate of movement of ingesta through the digestive tract, and this is probably unnecessary in pratical fish diets. That’s why, the mount of fiber in pellet must be considered because too much fiber result stomach full only but it will be in low the digestion. The minimal need in fat for carnivore fish is not more than 4% and herbivore fish is about 5% - 10% (http://www.o-fish.com, 2003).

Non-protein Nitrogen (NPN) is including compounds such as urea ammonia salts, amino acids, small peptides and nucleotides, represents the crude protein fraction most rapidly degradable in the rumen. NPM must be considered in the pellet due to the nitrogen in protein concentrate will influence the fish growth as protein is 50% of calorie need for fish growth is from protein.
Diameter pellet has to be appropriate/agree with catfish’s diameter mouth. Beside that the diameter of pellet is also must be appropriate to the physiologic type of fish mouth in order that fish can find the pellet easily. Catfish has a large mouth and esophagus for capturing prey (catfish are only slightly predaceous when supplemental feed is offered). The mouth has no teeth but an abrasive plate and there are pads but no teeth in the pharynx.

Microbial toxin will not fish but too much of it will cause stomachache for men. Microbial toxin can grow under conditions that include adequate substrate (carbohydrates), minimum moisture in the substrate of 145 relative humidity of 70% or above, adequate temperature, and oxygen. Microbial toxin is usually produced in feedstuffs prior to harvest, but it can also be produced in the feedstuffs or finished feeds during improper storage.

There are some kinds of microbial toxins such as aflatoxin and salmonella. Aflatoxin, produced by Aspergillus sp, is the carcinogenic properties and frequent occurrence. Common affects of aflatoxin consumption among farm animals are poor growth, liver damage, impaired blood clotting, decreased immune responsiveness, and increased mortality. While salmonella is a genus of rod-shaped gram-negative enterobacteriace that cases typhoid fever, paratyphoid fever, and foodborne illness. Salmonella species are motile and produce hydrogen sulfide.

Usually, farmers like to add probiotic antibiotic by themselves, not feed company. But it has to be stop 2 weeks before good harvest. Usually, antibiotic treatment only use for 7 to 10 days. But if it does not suit with recommended doctor the fish will immune. Those bacteria help to kill bacteria in the intestine and it can help digestibility process but it can live the reside which it can effect on men whose consume those fish.

That is why probiotic antibiotic are prohibitive to be given for fish and feed company never add those in the pellet, usually the farmer did, just for anticipated treatment. Based on the opinion of production manager in PT Matahari Sakti, the product quality can be measured by using ten indicators they are:
1. Product condition when accepted by customers

Product condition means that the condition of product when accepted by customers is in good condition such as the customer want, such as, the volume, the packaging, and the other characteristics of product must appropriate to the customer’s requirements.

2. Product impact to fish growth

The good pellet will give the good impact on fish growth. The farmers mostly have the daily growth report of fish growth, so the impact of pellet will be know by measuring the length and diameter of fish daily after pellet feeding.

3. FCR (Feed Conversion Rate)

FCR (Feed Conversion Rate) is the ratio that compares the volume of pellet on the meat of fish. The good ratio is that the minimal FCR value is 1:1 (1 kilogram of pellet will result 1 kilogram meat of fish).

4. The sameness in pellet size

The size of pellet must be same because the size of pellet will influence the fish in catching the pellet when feeding. Beside that, the size of pellet must appropriate to mouth fish.

5. The color of pellet

The good pellet is the pellet with the certain color, the original color when it out from production process. So when the color has changed it means that the pellet is not good anymore.

6. The aroma or smell of feed

The good pellet is the pellet with the certain smell. The farmers usually has recognized the smell of pellet so when the aroma of pellet is not as usual, the farmers will be indicate that the pellet has been changing or not a original pellet anymore.
7. The pollution level towards environment (pond)

The pollution level towards environment (pond) can be known from the water stability of the pellet. When the pellet has the good water stability so, it will not break easily and quickly. Hence, it will not make the pond be dirty or polluted.

8. The accuracy in quantity of pellet

The accuracy of the quantity of pellet means that the sum of pellet written in the packaging is same as the actual sum.

9. The packaging

The packaging is the way to pack the product and give the label the packaging. Usually, in the packaging of the pellet, it will be given the picture of the fish, the quantity of pellet, the information about ingredients, the logo of firm, the way to use or to fee, etc. Beside that, the packaging must keep the pellet safely.

10. The availability of product needed by customers

The availability of product needed by customer means that the product must be available in the place where the customers usually buy it. The availability of product also can be said as the compatibility of the available product with the customers needs.

Those ten elements of product quality are determined based on the experience of production manager in PT Matahari Sakti such as from customer demand and customer complaint.

**Customer Satisfaction**

In general satisfaction is a person’s feelings of pleasure or disappointment resulting from comparing a product’s perceived performance or outcome in relation to his or her expectation. Day explained that customer satisfaction and dissatisfaction is the responds of customers due to the disconfirmation felt by them between the previous expectation and the actual. Kotler et. Al (1996) explained that satisfaction is the level of feeling of people after comparing performance (output) that has been felt and their expectation.
The concept of customer satisfaction emerging can be illustrated as below:

1. If perception is less than expectation, \( P<E \), consumer will give negative respond towards the accepted goods or services. This will create the dissatisfaction to consumer.

2. If perception is equal as expectation, \( P=E \), consumer will give neutral respond towards the accepted goods or services. This will make consumer satisfied enough.

3. If perception is more than expectation, \( P>E \), consumer will give positive respond towards the accepted goods or services. This will make create satisfaction to consumer and consumer feel very satisfied.

Furthermore, to measure customers satisfaction, Duke (1993) arranged three main attributes they are, attributes related to product, attributes related to service and attributes related to purchase. Attribute related to product consists of product design, product features, product reliability, product benefit, value price relationship, and range of product or service. Attributes related to service consists of warrantly, delivery, complain handling, and resolution of problem. While attributes related to purchase consists of communication, courtesy, company reputation, company competence, and ease or convenience of acquisition.

**Relationship between Quality Product and Customer Satisfaction**

The theoretical framework that shows the relationship between quality product and customer satisfaction is revealed by Kotler (2000) that consumer satisfaction and company are linked closely to product and service quality. Higher level of quality results in the greater customer satisfaction. It means that when the customer is satisfied so it can be said that the customers have nice experience on quality of product, then they will repeat buying the product again and again and even recommend the product to others. Of course, it will increase the sales and finally will increase the firm profitability.

The concept of satisfaction in general includes the differences between expectation and performance or output has been felt by consumer. This concept is based on the disconfirmation paradigm by Oliver (quoted by Engel et.al., 1995). After accomplishing purchase of good or services, consumer will use and learn about the goods or services. His
phase will be followed by developing of satisfaction and dissatisfaction of goods or services. When consumer is not satisfied, he can complain towards firm or retailer. These both phases will be followed by the action of customer whether he discard goods or he will have the intention to repurchase in the future and even recommend to other to buy those goods or services.

Therefore, firm must be able to develop and increase product quality as the part marketing activities. This is caused in the marketing activities there are marketingmix strategy include product, price, place, and promotion. The goal is to obtain customer value in the long term and the measure of the success is customer satisfaction in long term also, in which this will make customer loyalty for firm and products.

In this research, the study will be limited in the relationship between the product quality and developing the customer satisfaction. As Kotler (2000) said that product is the subjective understanding of firms on anything that can be offered as the firm effort to achieve the goals through fulfilling consumer need and want, agree th market competency and capability and purchase power.

Hypothesis

Hypothesis that is stated in this research is: Product quality has the influence towards customer satisfaction in PT. Matahari Sakti Tulungagung.

Research Methodology

Research type used in this report represents the quantitative research. Quantitative research is a research methodology that seeks to quantify the data and generalize the result from the sample to the population of interest, and typically applies some form of statistical analysis that is inferential statistics. Inferential statistical is used to analyze sample of data which the result will be generalized toward the population of where sample taken. In this report, the writer will conduct conclusive research.

Conclusive research, according to Malhotra (1996) is the research designed to assist the decision maker in determining, evaluating, and selecting the best course of action to take in a given situation. While, the type of conclusive research selected in this report is
causal research that is the research that objected to determining the cause and effect (causal) relationships. In this type of research will be conducted mediating variables by using the experiment methods of analysis. In consequence research type of research design hypothesis. This research objective is to convey the affect of product quality towards customer satisfaction.

**Definition of Operational Variable**

The definition of operational variable explained as step to conduct the operation towards the concept used to measure the abstract concept in order to be constructed and able to be measured so that can be formulated into variables. Variable is a construct which its characteristic has been valued in the form of number and being measured in the form of scale. Still in the context of operational variable, it will explain further the variables that are going to be observed which then those variables become the research object that related to conclusion desired. This step is taken because by altering the concepts into variables, those concepts then can be observed empirically.

Therefore, there are two variables that need to be observed in relation to product quality and customer satisfaction. Those variables are:

1. Independent variable (X) is a variable that estimated to be the cause of emerge or change of the dependent variable, in other words independent variable is an influencing variable. In this research, the independent variable would be the product quality which measured based on its consisting dimensions and the real conditions in research object. Those elements are explained as follow:
   a. Product condition when accepted by customers.
   b. Product impact on fish growth
   c. FCR (feed Convention Rate)
   d. The sameness in pellet size.
   e. The color of pellet
   f. The aroma or smell of feed
g. The pollution level towards environment (pond)

h. The accuracy in quantity of pellet

i. The packaging

j. The availability of product needed by customers

2. Dependent variable (Y) is a variable that influence or a variable that become the consequence of the independent variable. In this research, the dependent variable would be customer satisfaction which measured by the attributes related to product because the focus is know the effect of product quality on customer on product.

**Population and Sample**

**Target Population**

Population is the aggregate of all elements, sharing some common set of characteristics that comprise the universe for the purpose of the marketing research problem (Malhotra, 1996). Population in this research is the customer of PT Matahari Sakti. Target population is the collection of elements or objects that possess the information sought by the researcher and about which inferences are to be made. In this study, target population is the populations that will be the information source i.e the customer of PT Matahari Sakti in Tulungagung Regency.

**Sampling Technique**

Sample is a subgroup of the elements of the population selected for participation study (Malhotra, 1996). Sample used in the research should have information needed by researcher (Malhotra, 1996). Sample used in this research is customer of PT Matahari Sakti in Tulungagung Regency. While sampling technique used in this research is total sampling or census due to the elements of population is only a few that is 60 customers. A census is a complete enumeration of the elements of a population or study object (Malhotra, 1996).

**Statistical Analytical Tool**
In processing and analyzing the data, the writer will use the SPSS for windows version 12.0. As for step of data processing taken:

**Descriptive Statistics**

Descriptive or illustrations of a group of data are visually can be done in two parts which are in the form of picture or graph and in the form of article. In SPSS for window program version 1.2.0 descriptive statistical method is applicated to yield the data picture in the form of tables of frequency and tabulation traverse (cross tabs). Tables of frequency used to present the data for just one variable, whereas the cross tabulation (cross tabs) is used to present the data in columns and line.

**Simple Linier Regression**

Simple linear regression model is the model of analysis that objected to obtain the influence given by the independent variable towards dependent variables, the model is:

\[ Y = a + bX \]

In which

\( Y \) = Latent Variable

\( A \) = Constant

\( B \) = Gradient

\( X \) = latent variable

\[
\begin{align*}
   b &= \frac{N(\sum_{i=1}^{n} XY) - (\sum_{i=1}^{n} X)(\sum_{i=1}^{n} Y)}{n(\sum_{i=1}^{n} x^2) - (\sum_{i=1}^{n} x)^2} \\
   a &= \frac{\sum_{i=1}^{n} Y - (\sum_{i=1}^{n} X)}{n}
\end{align*}
\]
in which

\[ n = \text{amount of sample used in the research} \]

To test the hypothesis of the research will be accomplished by using t test that is by seeing the probability value if t value of the models that must fulfill the following requirements:

1. If the probability value > 0.05, so the hypothesis is refused.
2. If the probability value < 0.05, so the hypothesis is accepted.

**Data measurement**

This study used closed end questionnaire to collect data from customer’s survey. Data measurement that is used by researcher is Likert scale. Likert scale is the scale that develop by Rensis Likert at first time and often called as method of summated rating, that is the value rating of each answer is summed to get the total value. In this research the data measurement would be relevated by using rating as follows:

The 1 value means as very poor in quality

The 2 value means as poor in quality

The 3 value means as not good enough

The 4 value means as good enough

The 5 value means as good

The 6 value means as very good

**Finding and Discussions**

**Product quality of PT Matahari Sakti**

Using natural ingredients as the binder, makes Prima Feed (PF) and LL product reach a good water stability that can stand for 2 – 3 hours in water, and safe to consume. Meanwhile, the laboratory division in its work uses a sophisticated machine, imported from
italy, for analyzing and testing products right from ingredients to finished ones, to determine the specifications for the problem, fat, fiber, ash, absorbing capacity, freshness and water content.

To maintain an increase the product quality, samples for raw materials, during and finishing products are taken to be analyzed and kept for a maximum of two months to be kept monitored later on. This is to show how PT Matahari Sakti commits to be responsible for qualified product and customer satisfaction.

To support the speed of production processes, PT Matahari Sakti also equipped with workshop. In this workshop, the problem of machine used for production process can be handle straightly so production process still can be running. What’s more constant research and development are diligently conducted to get the need of high quality new products commensurate with market demands, market segmentation and competitive pricing.

By lifted up the motto of “qualified feed for customer satisfaction”, PT Matahari Sakti never ceases to do the researchers and development to be able to create new products that are cost effective yet high in nutrition. The launching of the brand names of prima feed (PF) and LL is the materialization of such effort such as product diversification.

**Market Development of PT Matahari Sakti**

PT Matahari Sakti has covered nearly the whole part of Indonesia, and proudly admits that 40% of the turnover has served the foreign markets since 1996 up until now.

Equally impressive is the marketing system that it applies. It is called direct selling in which experienced, qualified and friendly sales person direct meet its customers. To smooth this system some branch officers are set up in many areas in almost all mover Indonesia. When an order is received, it will be treated with full attention as to serve it well and right on time; and this can materialize as a result as to serve it well and right on time; and this can materialize as a result of good team work among the staff as well as with travel services.

**The Desription of The Results**
As has been explained in the required procedure in presenting the study and its report of results, the following part will reveal the results. The data collection is accomplished by giving the questionnaire for 60 customers of PT Matahari Sakti, yet, questionnaires which can be used are only 54 sheets because the others are destroyed (such as there is the double responses for one question, there is item of questionnaire that does not filled by respondents, and the sheet of questionnaire is torn).

The description of respondent’s response

The following are the descriptive of respondents’ responses on the all items using the questionnaire that consists of two variables they are product quality and customer satisfaction. By knowing the proportions of respondent’s answers, it can be known the characteristic of respondents’ responses. The criteria of responses are:

<table>
<thead>
<tr>
<th>Very poor in quality</th>
<th>VP</th>
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<tbody>
<tr>
<td>Poor in quality</td>
<td>P</td>
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<tr>
<td>Not good enough</td>
<td>NGE</td>
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<tr>
<td>Good enough</td>
<td>GE</td>
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<td>Good</td>
<td>G</td>
</tr>
<tr>
<td>Very good</td>
<td>VG</td>
</tr>
</tbody>
</table>

The average responses of respondents to all items in the questionnaire which support the product quality spread on good enough and good. It conveys that the major of them get attention and consider anything related to product quality, i.e product condition when accepted by customers, product impact on fish growth, FCR (Feed Convetion rate), the samenes in pellet size, the color of pellet, the aroma or smell of feed, the pollution level towards environment (pond), the accurancy in quantity of pellet, the packaging, and the availability of product needed by customers. In which, the results reveal that the quality of pellet for catfish provided by PT Matahari Sakti have good valuation in customer perception.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>The Frequency of Respondents’ Responses on Items of Questionnaire Represented the product quality (%)</th>
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<tbody>
<tr>
<td>Product Quality</td>
<td>VP</td>
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</table>

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To know the items of product quality that get the high valuation from respondents, the following will show the average valuation gotten by each item in the questionnaire. The highest rate of respondents’ response is 4.89 that is product condition accepted by customers. While, the lowest rate is 3.93 that is the pollution level towards environment (pond). Yet, from all valuation given by respondents shows that the elements of quality product are about rate, that is 4.48.

The following table will show the variance of respondents’ responses on all items in questionnaire that represent customer satisfaction. Table below shows that the average responses of respondents to all items in the questionnaire which support the customer satisfaction spread on satisfied and dissatisfied. It conveys that the major of them get satisfaction on anything related to product, purchase, and service giving by PT Matahari Sakti. The criteria of responses are:
Very dissatisfied : VD
Dissatisfied : D
Dissatisfied enough : DE
Satisfied enough : SE
Satisfied : S
Very satisfied : VS

Table 2
The Frequency of Respondents' Responses on Items of Questionnaire Represented The Customer Satisfaction (%)

<table>
<thead>
<tr>
<th>Customer Satisfaction</th>
<th>VD</th>
<th>D</th>
<th>DE</th>
<th>SE</th>
<th>S</th>
<th>VS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Satification on Product condition when accepted by customer</td>
<td>-</td>
<td>-</td>
<td></td>
<td>14.8</td>
<td>79.6</td>
<td>5.6</td>
</tr>
<tr>
<td>2. Satification on product impact on fish growth</td>
<td>-</td>
<td>-</td>
<td>5.6</td>
<td>50.0</td>
<td>40.7</td>
<td>3.7</td>
</tr>
<tr>
<td>3. Satification on FCR (Feed Convention Rate)</td>
<td>-</td>
<td>-</td>
<td>9.3</td>
<td>38.9</td>
<td>46.7</td>
<td>5.6</td>
</tr>
<tr>
<td>4. Satification on The sameness in Pellet size</td>
<td>-</td>
<td>-</td>
<td></td>
<td>48.1</td>
<td>42.6</td>
<td>9.3</td>
</tr>
<tr>
<td>5. Satification on The color of pellet</td>
<td>-</td>
<td>-</td>
<td>7.4</td>
<td>55.6</td>
<td>35.2</td>
<td>2</td>
</tr>
<tr>
<td>6. Satification on The aroma or smell of feed</td>
<td>-</td>
<td>1.9</td>
<td>13.0</td>
<td>46.3</td>
<td>35.2</td>
<td>3.7</td>
</tr>
</tbody>
</table>
7. Satisfaction on the pollution level towards environment (pond)  
|            | - | - | 16.7 | 53.7 | 29.6 | - |

8. Satisfaction on The accuracy in quality of pellet  
|            | - | - | 5.6  | 33.3 | 53.7 | 7.4 |

9. Satisfaction on the packaging  
|            | - | - | 14.8 | 51.9 | 31.5 | 1.9 |

10. Satisfaction on the availability of product needed by customers  
|            | - | - | 3.7  | 22.2 | 53.7 | 20.4 |

To know the items of customer satisfaction that get the high evaluation from respondents. The highest rate of respondents’ responses is 4.91 they are the satisfaction on product condition when accepted by customers and satisfaction on the availability of product needed by customers. While, the lowest rate of one is 4.13 that is satisfaction on the by all respondents shows that the elements of customer satisfaction are about satisfied rate that is 4.49.

Simple Linear Regression

Based on the collected data, it can be used to accomplish the simple linear regression analysis. Simple linear regression analysis is used to test the effect relationship one variable toward the other. The dependent variable used in this study is customer satisfaction (Y) which is indicated by satisfaction related to product, satisfaction related to purchase, and satisfaction related to service. While, the independent variable used in this study is product quality (X) which consist of product condition when accepted by customers, product impact on fish growth, FCR (Fedd Convention Rate), the sameness in pellet size, the color of pellet, the aroma accuracy in quantity of pellet, the packaging level towards environment (pond), the accuracy in quantity of pellet, the packaging, and the availability of product needed by customer.

Table 3.  
Regression Analysis Data Output
Based on the output so it can be composed multiple regression model is \( Y = 20.118 + 0.553X \). This model can be explained that if there is no influence from product quality, the customers’ satisfaction value is 20.188 (or 2.0188, calculated from \( \frac{20.188}{10 \text{items}} \)). This value indicate that if the firm does not give attention to product quality, the customer satisfaction is too low, i.e. 2.0188. Yet, if there is influence from product quality, the customer satisfaction will increase about 0.533 for each one increasing of product quality.

Whereas, the data output of regression analysis also conveys that the R Square value is 0.400. This value shows the ability of product quality to predict customer satisfaction. Therefore, the result of this study reveals that the ability of product quality to predict the customer satisfaction is approximately 40%, while the 60% (100% - 40% = 60%) of customer satisfaction is predict other factor that are not used in this model.

**Examining Hypothesis**

Hypothesis in this study is that product quality has the influence towards customer satisfaction in PT Matahari Sakti Tulungagung. T test is used to test that the each factor indicated product quality has any effect on customer satisfaction. The requirement used is when the significant value (\(\alpha\)) of t value is more than 5%, hypothesis must be refused;
whereas, when the significant value (α) of t value hypothesis will be accepted 5%. The output data processing shows that the significant value (α) of product quality t value is less than 5%, I.E 0.000 BY T VALUE IS 5.884.

**Correlation Between Each Element Of Product Quality Towards Customer Satisfaction**

In order to know about the influence between each element of product quality towards customer satisfaction, it can be reveal by accomplishing the correlation analysis each element of product quality towards customer satisfaction partially. The following picture will convey the correlation each element of product quality towards customer satisfaction.

**Table 4. Correlation Between Each Element Of Product Quality Towards Customer Satisfaction**

<table>
<thead>
<tr>
<th>Product condition when accepted by customers (3)</th>
<th>Pearson correlation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sig. (2-tailed)</td>
<td>.491**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.000</td>
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<td></td>
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<td>.54</td>
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<table>
<thead>
<tr>
<th>Product impact on fish growth</th>
<th>Pearson correlation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sig. (2-tailed)</td>
<td>.236**</td>
</tr>
<tr>
<td></td>
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<td>.54</td>
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<table>
<thead>
<tr>
<th>FCR (Feed Convention Rate)</th>
<th>Pearson correlation</th>
<th>N</th>
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<tbody>
<tr>
<td></td>
<td>sig. (2-tailed)</td>
<td>.234</td>
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<td></td>
<td></td>
<td>.086</td>
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<td></td>
<td></td>
<td>.53</td>
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<tr>
<th>The sameness in Pellet size (5)</th>
<th>Pearson correlation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sig. (2-tailed)</td>
<td>.358**</td>
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<td></td>
<td></td>
<td>.008</td>
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<td></td>
<td></td>
<td>.54</td>
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<tr>
<td></td>
<td>N</td>
<td>Pearson Correlation</td>
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<tr>
<td>--------------------------------------</td>
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<tr>
<td>The color of pellet (4)</td>
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<tr>
<td>The aroma or smell of feed (1)</td>
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<td></td>
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<td></td>
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<tr>
<td>The pollution level towards enviroment (pond)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The accuracy in quality of pellet</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The packaging</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>The availability of product needed by customer (2)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Customer satisfaction (y)</td>
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<td></td>
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</tbody>
</table>
The Correlation Between Each Element Of Product Quality Towards Customer Satisfaction in sequence are;

1. The aroma or smell of feed, the correlation is 0.632 and significant on 0.000
2. The availability of product needed by customers, the correlation is 0.501 and significant on 0.000
3. Product condition when accepted by customers, the correlation is 0.491 and significant on 0.000
4. The color of pellet, the correlation is 0.424 and significant on 0.001
5. The sameness in pellet size, the correlation is 0.358 and significant on 0.008
6. The accuracy in quality of pellet, the correlation is 0.302 and significant on 0.028

Whereas, the other elements such as product impact on fish growth FCR (Feed Convention Rate), the pollution level towards environment (pond), and the packaging do not have correlation significantly towards customer satisfaction on product. It can be seen by their significant value of correlations that are less than 0.05 (5%).

Yet, this result can be explained that customers’ satisfaction is not merely caused by the aroma or smell of feed, the availability of product needed by customers, product condition when accepted by customers, the color of pellet, the sameness in pellet size, and the accuracy in quantity of pellet, while the other elements of product quality such as product impact on fish growth, FCR (Feed Convention Rate), the pollution level towards environment (pond), and the packaging do not the customers’ satisfaction. Because, the result of regression analysis shows that these elements of product quality can influence customers’ satisfaction aggregately.

Discussion of the results

The result of this study conveys that customer satisfaction is influenced by product quality. As wilkie (adapted by Tjiptono, 2002:24) explains that satisfaction is the
emotional responses of revolution on product or service consumption experiences. In this context, customer evaluation can be seen from their perception on quality product; and their satisfaction related to product delivered by PT Matahari Sakti to its customers who use and buy pellet.

Based on the analysis using pearson correlation can be convey that the elements of product quality. This result of study support the relevance study established by Ferinadewi (2005) that there are three which consumer perceived as the most important attributes related to product which are quality, risk, and brand. Whereas, the result study reveals that the ability of product quality to predict the customer satisfaction is approximately 40%, while the 60% (100%−40%=60%) of customer satisfaction is predict other factor that are not used in this model. As the study accomplished by Djati and Darmawan (2005) that employees performance has any effect on customer satisfaction, in which, the employee performance is indicated by five dimension on service quality (SERVQUAL) which must be delivered to customers. Those five dimensions are reliability, tangible, responsiveness, assurance, dan empathy.

Therefore, actually, the factor must be considered by PT Matahari Sakti to increase the customer satisfaction is product quality. Beside that, the other factor is employee quality due to this employee is related to delivering the service.

Conclusion

Based on the analysis an discussion of the result of study, the conclusion that can be revealed that the product quality of the pellet for catfish produced by PT Matahari Sakti is in good rate that is 4.48, in which highest rate of respondents’ responses is 4.89 that is product condition accepted by customers. While, the lowest rate is 3.93 i.e 4.49, in which the highest rate of respondents’ responses is 4.91 satisfaction on product condition hen accepted by customers an satisfaction on the availability of product needed by customers. While, the lowers rate of one is 4.13 that is satisfaction on the pollution level towards environment (pond).

Related to the result of regression analysis, the composed multiple regression model is Y 20.118 + 0.553X. It means that if there is no influence from product
quality, the customers’ satisfaction value is too low i.e 20.118 (or 2.0118). Then, the influence rate of product quality towards customers satisfaction is about 0.553. This influence is significant due to the significant value of t value is less than 5%, i.e. 0.000 by t value is 5.884.

The result of correlation analysis partially shows that the elements of product quality which have positive and significant correlation are the aroma or smell of feed, the availability of product needed by customers, product condition when accepted by customers, the color of pellet, the sameness in pallet size, and the accuracy in quantity of pellet, while the other elements of product quality such as product impact on fish growth, FCR (feed conversion rate), the pollution level towards environment (pond), and the packaging do not have correlation significantly towards customers satisfaction on product. The highest correlation is the aroma or smell or feed, in which the correlation is 0.632 and significant on 0.000.

Recommendation

Based on the conclusion above, the recommendation which can be given in this study is that the PT Matahari Sakti should get attention to product quality especially, to the pollution level towards environment (pond) as the impact of pellet usage, due to the customers valuation to this factor is below the average valuation of other factors. The pellet must be designed as well as possible to minimize the pollution level towards the environment such as, the pellet must be able to endure in the water so that it does not melt until long time (until fishes consume it) and PT Matahari Sakti also must consider the water stability of pellet due to support the pollution level towards environment (pond).

Besides that, PT Matahari Sakti should always attempt to improve and innovate the product quality and service also due to those two factors are given high consideration by customers in getting the satisfaction. This study is still has many limitation, so that for further research is recommended to get the farther sample, because the customers of pellet produced by PT Matahari Sakti is not only in Tulungagung Regency, but also in all market
in Indonesia and even until abroad. In which, every people has unique perception to product quality based on his background of life and his social life, and his psychological life. Beside that, for further research is recommended to analyze data by supporting the quantitative result with the data quantitative from respondents. Therefore, the result will be practicable and objective.

References


