Customer Satisfaction Index Model on Three Level Of Socioeconomic Status In Bogor
Case Study: Customer Satisfaction on Branded Cooking Oil Product

Budi Setiawan*

Customer satisfaction index models have been developed in many countries, including Indonesia. Those models were commonly not focused on the socioeconomic status (SES) of the customer, so this condition could be a research gap. The aims of this research is to analyze the customer satisfaction index model of branded cooking oil product in Bogor, Indonesia based on SES established from the household monthly routine consumption. Questionnaires were used as primary data collection instrument in this study, while data analysis was carried out with variance based structural equation modeling (SEM) which is also known as Partial Least Square (PLS) model, and Kruskall Wallis non-parametric test. Perceived quality, perceived value and customer expectation as were significantly influencing the customer satisfaction construct in the structural model. This study also concluded found that there is different level of overall customer satisfaction on the three levels of customer’s SES.

Keywords: Customer satisfaction index, socioeconomic status, household routine consumption, branded cooking oil, partial least square model

Model indeks kepuasan pelanggan telah banyak dikembangkan di berbagai negara, termasuk di Indonesia. Berbagai model tersebut pada umumnya tidak memberi fokus berarti pada status sosial ekonomi (SES) pelanggan, sehingga kondisi ini menyebabkan adanya kesenjangan penelitian. Penelitian ini bertujuan untuk mengkaji model indeks kepuasan pelanggan minyak goreng bermerek di Bogor, Indonesia berdasarkan pada SES yang dibentuk dari tingkat konsumsi rutin rumah tangga per bulan. Pengumpulan data primer pada studi kasus ini menggunakan instrumen kuesioner dan analisis data menggunakan Structural Equation Modeling berbasis varians atau yang lebih dikenal dengan analisis Partial Least Square (PLS) dan analisis uji statistik nonparametrik Kruskall Wallis. Kepuasan pelanggan mampu dibentuk secara positif dan signifikan dengan menggunakan konstruk persepsi kualitas, persepsi nilai dan harapan pelanggan, dalam model struktural. Studi ini juga menemukan adanya perbedaan tingkat kepuasan pelanggan secara keseluruhan pada tiga tingkat SES dari pelanggan.

Kata kunci: Indeks kepuasan pelanggan, status sosial ekonomi, pengeluaran rutin rumah tangga per bulan, minyak goreng bermerek, model partial least square

Introduction

The study of customer satisfaction has attracted interest of many researchers. The studies were no longer limited only in knowing whether customers are satisfied or not, but has evolved into complex structural models. Johnson, et al (2001) provided information that a number of countries have developed their national customer satisfaction index models for a wide variety of goods and services, such as Sweden with the Swedish Customer Satisfaction Barometer (SCSB) model in 1989, America with The American Customer Satisfaction Index (ACSI) model in 1994; Norway with The Norwegian Customer Satisfaction Barometer (NCSB) model in 1996.

Bayol, et al (2000) estimates the European Customer Satisfaction Index (ECSI) model, using customer expectations, perceived quality, perceived value, customer satisfaction, image,

* Study Program of Management. STIE Kesatuan Bogor, Email: budisetiawan6789@gmail.com
complaint, and customer loyalty as the constructs. Terblanche (2005) estimated the ACSI model using customer expectations, perceived quality, perceived value; customer satisfaction; and customer loyalty as the constructs. Serenko (2011) tried to apply the ACSI model to measure the student satisfaction with Canadian music programs. Development in this stream of research included addition of constructs such as perceived loyalty, tuition fee change tolerance and word of mouth. Studies that examined the structural model of customer satisfaction index measurement in Indonesia (Indonesian Customer Satisfaction Index/ICSI), was carried out Dachyar and Noviannei (2012). They applied the customer satisfaction index structural model in the telecommunications industry in Indonesia using company's image, customer expectations, perceived quality, perceived value, and customer loyalty as independent variables.

Adoption of customer satisfaction models of some of the countries into a model of ICSI, can be done by considering many factors. One of the factor is by taking socioeconomic status (SES) of the customer into account. This practice had not been frequently adopted by researchers in the field of customer satisfaction research in Indonesia. This condition potentially made a gap in the development of ICSI's structural models in the future, because the measurement can not only be a "one-time" or "single-shot studies".

This study used a case study of customer satisfaction households in Bogor on branded cooking oil products, one of the product categories surveyed in Indonesian Customer Satisfaction Award (ICSA) since 1999. The aim of this study is twofold: firstly, it attempted to develop the best structural model of customer satisfaction index of branded cooking oil and compare the level of customer satisfaction across three different levels of SES established based on monthly household consumption of food per month.

**Literature Review**

Güngör (2007) said that the word "satisfaction" is derived from the Latin word "satis" (pretty good, adequate) and "facere" (to do or make). Simply put, satisfaction can be defined as "efforts to comply with something" or "to make something adequate". Definition of customer satisfaction according to Kotler and Keller (2009) is a feeling of pleasure or disappointment arising from someone who compare a product's perceived performance (or outcome) against their expectations.

Fornell (2007) said that the decline in customer satisfaction can reduce demand and other things in a "vicious circle", i.e., the erosion of the economic value of the company, employment uncertainty, and will eventually slow the economic growth. Referring to the Güngör (2007), and Fornel (2007)'s opinion, it can be ensured that the customer satisfaction is one of the best indicators for future profit.

According to Zeithaml (1998), perceived quality is the assessment (perception) of consumers regarding product excellence as a whole compared to its alternative. Thus, perceived quality is the ability of a product to be regarded as acceptable in providing customer satisfaction relatively compared to alternative products from competitors. High perceived quality will encourage consumers to prefer our brand compared to brands from the competitors. Tsiootsou (2005) said that perceived quality is one of the most important constructs in marketing, and has become the focus of attention of practitioners and researchers for a long time. This is because perceived quality can bring positive influence and benefits for marketing performance. Sumarwan (2011) explained that consumer confidence in a product, attributes, and benefit of product describe consumer perception. Therefore, the trust will differ among consumers.

Tsiootsou (2005) examined the effect of perceived quality on overall customer satisfaction using the students from the University of Greece as respondents. The research results indicated that perceived quality has positively significant relationship and effect to the customer satisfaction. Perceived quality is also able to explain most of the variance of overall customer satisfaction, compared to the repeat purchase of customers. Bayol, et al (2000) empirically demonstrated on a cell phone provider industry in European countries, that there is a significant positive effect of perceived quality on customer satisfaction. Terblanche (2005) conducted a study using the ACSI model on fast
food retail industry in seven metropolitan cities in South Africa. One of the results was that perceived value was influenced by the difference between the monetary and non-monetary costs, consumer tastes, and consumer characteristics, according to Bolton and Drew (1991). Kartajaya (2006) described mathematically that perceived value is the perceived quality divided by price. Perceived value will go up if the perceived quality goes up or the price drops.

H1: Perceived quality has a positive effect on customer satisfaction
H2: Perceived quality has a positive effect on perceived value

Kotler and Keller (2009) defined perceived value as the difference between customer perceived assessments of all benefits and costs from a bid for the alternative. Perceived value strongly correlated with the total benefits and the total costs of the customers. Sudin (2011) said that perceived value is as a strategic weapon to get customer attention and then keep it, also it becomes a most significant factor of business on manufacture or service provider.

Sudin (2011) examined the role of perceived value in influencing customer satisfaction in several companies in Malaysia using convenience sample. The results of his research found that there is a positive and significant effect of perceived values on customer satisfaction. Ekkildsen, et al. (2004) stated that perceived value is one of the dominant factors that significantly shape the customer satisfaction of retail business in Denmark. Terblanche (2005) provides the same empirical support, that perceived value is one of the dominant factors that significantly shape customer satisfaction.

H3: Perceived value has a positive effect on customer satisfaction

In general, customer expectations are beliefs or estimates of what the customer will receive. Bayol, et al (2000) explains that customer satisfaction can be influenced by many predictors, and customer expectation is one predictor that positively affects customer satisfaction. Moreover, customer expectation also found to form perceived quality, as a predictor on customer satisfaction. Kuang-Wen-Ching Wu and Jun Ding (2007) explained that many of the empirical research literatures in the field of customer satisfaction provide results that customer expectation has a positive and significant effect on customer satisfaction level. Van Ryzin, et al (2004) implemented the model of American Customer Satisfaction Index (ACSI), to test the drivers and behavioral consequences of overall satisfaction with local government services. The results suggest that expectations of service quality significantly drive both perceptions of quality and overall satisfaction across all subgroups.

H4: Customer expectation has a positive effect on perceived value
H5: Customer expectation has a positive effect on perceived quality
H6: Customer expectation has a positive effect on customer satisfaction

Marketers have confidence that demographics are important factors in determining market segmentation. In general, researchers define expenditure in terms of that relatively same, but the difference is the basis of grouping often also known as Socioeconomic Status (SES).

H7: There is a difference in overall customer satisfaction based on SES

Based on the theoretical basis and the hypotheses development, then framework of this study is provided in Figure 1.

Methods

The method used in this research was case study method; the type of the research nature was explanatory research that aimed to analyze causality relationship between research constructs and then testing the proposed hypotheses. Moreover, the study design was also combined with the comparative method. Primary data were collected by questionnaire as the data collection instruments in a certain period of time (cross section). Types of questions used were the combination of closed-ended questions and open-ended questions. On closed-ended questions, the measurement scale used was 5 points Semantic Differential scale. Meanwhile, on the open-ended questions, the respondents were allowed to give an answer in the form of sentences or narratives, in accordance with the actual
conditions or circumstances. Pre-test was conducted by giving questionnaires to 30 respondents, and then the validity and reliability of the questionnaire were tested. Results of validity and reliability analysis are presented in Table 1.

Based on Table 1 it can be concluded that the questionnaire instrument used in this study has met the validity and reliability aspects, making it feasible to do further analysis. For the main study, a sample consisted of 385 respondents were selected by convenience sampling. The respondents were spread in three districts in Bogor Regency, namely Cibinong, Gunung Putri, Cileungsi, and two districts in Bogor City, namely Bogor Barat and Tanah Sareal. Establishment of three levels of socioeconomic status was carried out by performing the following steps:

1. Calculating the range value, which is the difference between the maximum value and the minimum value
2. Setting the number of classes, which is $1 + 3.3 \times \log n$
3. Calculating the interval between the data
4. Constructing a frequency distribution table
5. Performing quartile analysis

Structural model was formulated using the variance-based SEM or more commonly known as Partial Least Square (PLS) analysis. The SmartPLS software was used to analyze the statistical data. Ghozali (2008) describes a path analysis model of all latent variables in the PLS consists of the following three sets of relationships:

1. Inner models specify relationships among latent variables (structural model).
2. Outer models specify the relationship between the latent variables with the indicator variables itself (measurement model). Outer model define how each block of indicators correlate with each latent variables itself.
3. Weight relations in which case the value of the latent variables can be estimated. Inner and outer models specify the model followed in the PLS algorithm.

Table 1. The Results of Validity and Reliability of the Questionnaire

| No | Constructs | Manifest | Correlation Coefficient | Cronbach’s Alpha Score |
|----|-------------|----------|--------------------------|------------------------|
| 1  | Perceived Quality | Resilience when frying | 0.585 | 0.638 |
|    |              | Free cholesterol | 0.621 |          |
|    |              | Food cooked through | 0.626 |          |
|    |              | Cleanliness of the production process | 0.695 |          |
|    |              | Product’s color | 0.598 |          |
| 2  | Perceived Value | Selling price compared to the given quality | 0.759 | 0.629 |
|    |              | Selling price compared to the expected quality | 0.672 |          |
|    |              | Nonmonetary cost | 0.868 |          |
| 3  | Customer Expectation | The comparison of expectation, before and after becoming a customer | 0.677 | 0.616 |
|    |              | Hope the quality is more superior than competitors | 0.654 |          |
|    |              | Hope evidence advantages in advertising and packaging | 0.696 |          |
| 4  | Customer Satisfaction | Overall customer satisfaction | 0.893 | 0.794 |
|    |              | Ability to fulfill customer expectation | 0.920 |          |
|    |              | Overall superior quality | 0.708 |          |

Source: developed from Bayol, et al. (2000) and Terblanche (2005)

Figure 1. Research Framework
In order to determine whether there are differences in the level of customer satisfaction based on three levels of SES, non-parametric statistical method (Kruskal-Wallis test) was used. This method was used, because the SES data were measured in ordinal measurement scale.

**Result and Discussion**

**Respondents Profile**

Customer frequency by sex was composed of 44.70% male and 55.30% female. In terms of age, respondents were aged between 20 to 60 years old, but majority of respondents were 35 years old. Respondent’s formal education was dominated by the respondents who had finished high school (52.99%), followed by respondents who had attained undergraduate degree (27.53%). In terms of number of family members, most respondents have family members between 1 and 4 persons (75.8%), followed by respondents having family members between 5 and 10 persons (22.3%). The majority of respondents (81.6%) declared that they know the branded cooking oil through the advertising on television, and made purchase decision by themselves (69.6%), or with spouse (22.9%) and other (7.6%).

**Socioeconomic status (SES) of the Customer of Branded Cooking Oil in Bogor**

Analyses of the frequency distribution of SES were as follows:

1. The range value was IDR 4,100,000
2. The number of classes is 10 ($1 + 3.3 \times \log 385 = 9.532$, rounded to 10)
3. Data interval was IDR 410,000

To establish three socioeconomic status of the customer based on the level of household consumption per month, the author first determined median class of grouping data. The median class is in the 2nd class, because the cumulative value of the 1st class (104) and 2nd class (164) has qualified the determination of the median class ($268 \geq 192.5$). Based on this approach, the table of SES can be arranged and provided in Table 3.

**PLS Algorithm Analysis**

Establishment of the model begins with a PLS algorithm analysis, to test the validity of construct’s indicators and to test the constructs reliability.

According to Table 4, we know that all loading factors have a score above 0.50. Thus it can be concluded that the constructs have good convergent validity. Similarly the cross loading value shows good discriminant validity, because the correlation coefficient of reflective indicators to the construct itself is higher than the correlation coefficient of reflective indicators to the other constructs. It can be interpreted that our questionnaire has valid indicators to measure the constructs in the model. Constructs reliability were measured by composite reliability, average variance extracted (AVE) and
by comparing the square root of AVE with the coefficient correlation between constructs. The result provided in Table 5.

According to Table 5 it can be concluded that the entire constructs were reliable, because the score of its composite reliability is above 0.60 and similarly with the score of AVE that above 0.50. Besides that, we also can compare the square root of AVE with the coefficient correlation between constructs, provided in Table 6.

The square root of AVE is higher than the coefficient of correlation between constructs. It means the reflective indicators have high discriminant validity. These results support the composite reliability and AVE analyses that have been done, to test the constructs reliability.

**Bootstrapping Analysis**

Inner model creates path coefficient that can be used to test the alternative hypotheses. The result is provided in Table 7.

According to Table 7, the path between customer expectation and customer satisfaction has a coefficient score 0.191 with T-Statistics 3.714 > 1.645 (one way test). These results provide...
empirical evidence that customer satisfaction has a positive and significant effect to customer satisfaction. Customer expectations towards branded cooking oil were increased from before becoming a customer until has becoming a customer. This means that the customers have expectations of branded cooking oil, to improve its quality, even better than when the respondent has not yet decided to become a customer. In addition, customers also expect that the branded cooking oil can have more superior quality rather than non-branded cooking oil and also be able to prove all the benefits from the product, which has been delivered on its advertising and packaging. This is what underlies the creation of customer satisfaction, as evidenced by the alternative hypothesis testing that has been done.

Path between customer expectation and perceived quality has a coefficient 0.625 with a T-Statistics value 17.323 > 1.645 (one way test). These results provide empirical evidence that customer expectation has a positive and significant effect to the perceived quality. Customer expectation has an indirect effect through perceived quality to customer satisfaction. This means that when an increase in customer expectations is able to be followed by an increase in perceived quality, customer satisfaction will then be created. Causality between customer expectation and perceived value has a coefficient 0.215 with a T-Statistics value 4.573 > 1.645 (one way test). These results provide empirical evidence that customer expectation has a positive and significant effect to the perceived value. Thus, when the customer satisfaction was perceived, similar with the monetary and nonmonetary cost which has been issued by customers, it will indirectly give significant contribution to establish customer satisfaction.

Path between perceived quality and customer satisfaction has a coefficient 0.403 with a T-Statistics value 6.410 > 1.645 (one way test). These results provide empirical evidence that perceived quality has a positive and significant effect to customer satisfaction. The attributes of branded cooking oil that signify perceived quality include: hardy when used for frying, cholesterol free, and able to cook food through, hygienic, and have a clear color. Causality between perceived quality and perceived value has a coefficient 0.544 with a T-Statistics value 11.575 > 1.645 (one way test). These results provide empirical evidence that perceived quality has a positive and significant effect to perceived value. If the branded cooking oil product already gave the similar quality with the customer perception, then the customer would assume that the monetary and nonmonetary costs they expended to have the product will be worthwhile.
Path between perceived value and customer satisfaction has a coefficient 0.264 with a T-Statistics value 4.701 > 1.645 (one way test). These results provide empirical evidence that perceived value has a positive and significant effect to customer satisfaction. The perceived values of the customers are the price of the product that reflect a given quality, and the quality also already fit with the quality that customers expect. Overall, this is what underlies the creation of customer satisfaction, as evidenced by the testing of alternative hypotheses, although in terms of willingness to buy a product by extra cost, customers expressed a neutral position.

The Best PLS Model of Customer Satisfaction Index

The best PLS model of customer satisfaction index on branded cooking oil that was associated with the three levels of SES from customer, is presented on Figure 2.

According to Figure 2, 56.4% variance scores of customer satisfaction were explained simultaneously by perceived quality, perceived value and customer satisfaction. Perceived quality and customer expectation, simultaneously explain about 48.9% variance scores of perceived value. Meanwhile the customer expectation explains about 39% variance scores of perceived quality. The model has a valid measurement indicators and also reliable to reflectively measure each construct on the model. This model on figure 2 established the customer satisfaction model of branded cooking oil product associated with three customers SES levels. This results provide empirical evidence and supports earlier research about customer satisfaction models.

To analyze whether there are differing levels of overall customer satisfaction based on the three levels of SES, cross tabulation and nonparametric test statistics were conducted. The results are displayed in Table 8.

Table 8 displays information about the spread of customers overall satisfaction based on three level of SES. There was an indication that higher customers SES would lead to higher satisfaction level. The results from nonparametric statistic suggest that there was different level of customer satisfaction of branded cooking oil products across three levels of SES of household customers in Bogor.

Conclusion

According to the result and discussion, the best model of customer satisfaction index on branded cooking oil product on three level of SES already was established. Perceived quality has a positive and significant effect to customer satisfaction. If the branded cooking oil product is able to deliver quality similar to the customer’s perception, then the customer satisfaction will be established. If a branded cooking oil product have the quality that match with customers perception and fit enough with the monetary and nonmonetary cost expended by customer, assuming all other things constant, then customer satisfaction may be attained. Overall customer satisfaction has a positive and significant effect to perceived value and perceived quality, directly and indirectly it will be able to establish the customer satisfaction. From SES level perspectives based on routine consumption per month, there’s a different level of customer satisfaction level. This research also provides the result that the increase in level of SES will linearly be followed by increase in customer satisfaction level.
Future Study

This research has limitation in terms of analytical tools used to establish the structural model of customer satisfaction based on three different level of customer SES simultaneously. In future study, this research can be developed further by including the SES variable directly into the model as a moderating variable and then analyze it simultaneously.

References

Bolton, Ruth N. and James H. Drew. (1991), A Longitudinal Analysis of the Impact of Service Changes on Customer Attitudes. Journal of Marketing, 55 (1): 1-10.
Dachyar, M. and Noviannei, M. (2012), 'Customer Satisfaction Index Telecommunication Industry in Indonesia', World Academy of Science, Engineering and Technology, International Science Index 69, 6(9), 125 - 126.
Eskildsen, Jacob, Kai Kristensen, Hans Jorn Juhl, Peder Ostergaard. (2004), The Drivers of Customer Satisfaction and Loyalty. The Case of Denmark 2000-2002. Total Quality Management. 5-6 (15): 859-868
Fornell, Claes. (2007), The Satisfied Customer (Winners and Losers in the Battle for Buyer Preference). Hampshire, England: Palgrave Macmillan
Ghozali, Imam. (2008), Structural Equation Modeling. Metode Alternatif dengan Partial Least Square. Semarang: Badan Penerbit Universitas Diponegoro
Güngör, Hüseyin. (2007), Emotional Satisfaction of Customer Contacts. Vossiuspers UvA: Amsterdam University Press
Johnson, Michael D. Anders Gustafsson, dan Tor Wallin Andreassen. (2001), The Evolution and Future of National Customer Satisfaction Index Models. Journal of Economic Psychology. 22: 217 – 245
Kartajaya, Hermawan. (2006), Marketing Plus 2000 (Siasat Memenangkan Persaingan Global). Jakarta: Gramedia Pustaka Utama
Kotler, Philip and Keller, Kevin Lane. (2009), Marketing Management, 13th edition, Upper Saddle River, NJ: Prentice-Hall
Kuang-Wen Wu dan May-Ching Ding, (2007), Validating the American Customer Satisfaction Index Model in the Online Context: An Empirical Study of U.S. Consumer Electronics E-Tailers. International Journal of Business and Information. 2 (2): 199-220
Marie-Paule Bayol, Anne de la Foye, Carole Tellier dan Michel Tenenhaus. (2000), Use of PLS Path Modeling to estimate the European Consumer Satisfaction Index (ESCI) Model. Statistica Applicata. 12 (3): 361-375
Tsitsou, Rodoula. (2005), Perceived Quality Levels and their Relation to Involvement, Satisfaction, and Purchase Intentions. Marketing Bulletin. 16: 4 – 20.
Terblanche, Nic S. (2005). A Study of Two Customer Retention Measures: The American Customer Satisfaction Index And The Conversion Model. ANZMAC Conference: Relationship Marketing (Consumer). 1: 50 – 65
Serenko, A. (2011), 'Student satisfaction with Canadian music programmes: the application of the American Customer Satisfaction Model in higher education', Assessment & Evaluation In Higher Education, 36, 3, pp. 281-299, Education Research Complete, EBSCOhost, viewed 12 June 2014.
Sudin, Suhami. (2011), How Service Quality, Value and Corporate Image Affect Client Satisfaction and Loyalty. The 2nd International Research Symposium in Service Management. 1: 26 – 30
Sumarwan, Ujang. (2011), Perilaku Konsumen. Teori dan Penerapannya dalam Pemasaran. Bogor: Ghalia Indonesia
Van Ryzin, G, Muzzio, D, Immerwahr, S, Gulick, L, & Martinez, E. (2004), 'Drivers and Consequences of Citizen Satisfaction: An Application of the American Customer Satisfaction Index Model to New York City', Public Administration Review, 64, 3, pp. 331-341, Education Research Complete, EBSCOhost, viewed 12 June 2014.
Zeithaml, Valarie A. (1988), Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. Journal of Marketing. 52(3): 2-22.