

# Analysis of Customer Satisfaction and Loyalty of Modern Cooking Technology

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## ABSTRACT

Changes in people's lifestyles regarding modern cooking technology are starting to enlarge in society, this can be seen by the increasingly literate people of the need for household tools or modern cooking tools. Modern cooking utensils can add value to consumers; not only functional values related to product quality, but also emotional values such as prestige and a sense of pride in using modern products to complement their home.

This study aims to analyze the effect of perceived product quality, perceived service quality, brand image and warranty on customer satisfaction, and the impact on consumer loyalty. The population in this study were all users of hobs in Purwokerto. The sample size in this study was 130 consumers. Convenience sampling method is used in sample selection. The analytical tool used in this research is multiple linear regression method

The results of the analysis show that the perception of product quality, perceived service quality, brand image and warranty have a positive effect on customer satisfaction. Furthermore, customer satisfaction has a positive effect on consumer loyalty. The managerial implication of this research can be used as a reference regarding the development of a marketing strategy for modern cooking tools so that it can meet needs, wants and provide satisfaction to consumers, and ultimately build consumer loyalty.

Keywords: perceived product quality, perceived service quality, brand image, warranty, satisfaction, loyalty

## 1. Introduction

Changes in people's lifestyles with modern cooking technology are starting to enlarge in society, this can be seen by the increasingly literate people of the need for modern household appliances. Modern cooking utensils can add value to consumers; not only functional values related to the quality of their products, but also emotional values such as prestige and pride in using modern products to complement their homes. Changes in people's lifestyles regarding cooking technology have become an opportunity for many companies to offer products that meet their needs and needs. consumer desire for modern cooking tools. In order to win the competition, the company must be able to provide more value to consumers compared to the value provided by competitors.

Perceived value of customers is the overall customer assessment of the usefulness of a product for what is received and given by the product. Perceived value dimensions are perceived product quality, perceived service quality and corporate image (Ishaq, 2014 and Thielemann, 2018).

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Perceived product quality is a combination of product characteristics from engineering and manufacture that determines the extent to which the product will meet customer expectations (Feigenbaum, 1983). Perceived service quality is the quality of service that is created and what will be improved cannot be measured from the company's point of view, but must be from the perceived quality (Kotler and Garry, 2001). Corporate image can be defined as a combination of what consumers feel on retail brands, producer brands, and store brands.

The next most important variable for sales of products and services is warranty. Warranty is one of the most important factors in carrying out after-sales service. Guarantee is shown to convince consumers that the product is in good condition or free from damage, as a result of inaccurate spelling or the use of bad materials that are valid for a certain period and have an impact on customer satisfaction. Customer satisfaction will provide long-term benefits for the company, namely consumer loyalty. Satisfied customers tend to be loyal customers. With the existence of this business phenomenon, the researcher is interested in conducting research with the title "Analysis of Customer Satisfaction and Loyalty of Modern Cooking Technology" on cookstove consumers in the city of Purwokerto.

## **2. Literature Review**

### *2.1 Perceived value theory*

Woodruff (1997) in Thielemann, et al. (2018) stated that the concept of customer value is influenced by the concepts of quality, benefit, sacrifice and utility; however these constructs are often not clearly defined and subject to individual perceptions. Creating loyal customers and maintaining customers is a critical strategic marketing issue for companies in today's highly competitive environment. According to Kotler (2003) Perceived Value is "the perceived value of what is the perceived monetary value of the bundle of the economic, functional, and psychological benefits customers expect from a given market offering".

### *2.2 Customer Loyalty Theory*

According to Tjiptono (2008: 110), loyalty is a customer commitment to a store, brand or supplier based on a positive attitude which is reflected in the form of consistently repeated purchases. To have loyal consumers, producers first need to understand the four elements of loyalty which consist of (Tjiptono, 2008; 89):

- Customer value, concerning consumer perceptions of the calculation results of the cost and benefit that will be obtained from a brand for the product it will buy.
- Consumer characteristics, related to cultural background and consumer experiences that affect the individual character of consumers.
- Switching barrier is a barrier that is built to prevent consumers from switching to another brand. These obstacles can be economic, social, psychological, functional, and ritual or habitual.

### *2.3 Customer satisfaction*

According to Lovelock and Wright (2005) satisfaction is an emotional state, their post-purchase reactions can be in the form of anger, dissatisfaction, annoyance, neutrality, joy, or pleasure. Meanwhile, according to Kotler (2006) Customer satisfaction is the extent to which the achievement of the performance given by a product can be commensurate with customer

expectations. Customer satisfaction is expected to be the beginning of loyalty, although satisfied consumers cannot be sure that these customers will be loyal ..

#### *2.4 Perceived Product Quality*

There is a close relationship between product quality, service, customer satisfaction and company profitability (Kotler, 1997: 127). Kotler and Armstrong (2010: 27) argue that: Product quality is the ability of a product to carry out its functions, including reliability, durability, accuracy, ease of operation, and product improvement, as well as other valuable attributes. Every company that wants to be able to meet the needs and desires of customers will try to make a quality product, which is displayed both through the outer characteristics (design) of the product and the core (core) of the product itself.

#### *2.5 Perceived Service Quality*

Service is any action or activity that can be offered by another party, which is basically intangible and does not result in ownership of anything. Service is the behavior of producers in order to meet consumer wants and needs in order to achieve satisfaction with the consumers themselves (Kotler, 2002: 83). Lewis and Booms in Fandy Tjiptono (2008: 85) explain that service quality can be interpreted as "a measure of how well the company has the needs and desires of customers according to expectations"

#### *2.6 Brand Image*

According to Kotler (2003: 51), brand image is a creation created by marketing programs that have very beneficial links and unique associations that are embedded in consumer memory. By building and developing a brand image that is acceptable to consumers, it will help consumers determine products and services so that companies will more easily compete in the market

#### *2.7 Warranty*

According to Blischke and Murthy (1994), in this policy the company agrees to replace damaged products for free during the warranty period. The guarantee in this policy is called the Free-Replacement Warranty (FRW). Guarantee is a guarantee provided in writing by the manufacturer or supplier to consumers for goods sold against damages that arise within a certain period of time. Usually this guarantee is stated in a written form in the form of a statement that the producer guarantees that the product is free from worker error and material failure within a certain period of time.

### **3. Research Methodology**

#### *3.1 Research design*

The research design uses multiple linear regression to consumers of hobs in Purwokerto to determine the variables that affect customer satisfaction and loyalty. Sources of data in this study were taken from:

- Primary data obtained from cook stove users in Purwokerto through a list of questions given.
- Secondary data obtained from articles, journals and other data to support this research.

#### *3.2 Data collection*

*Questionnaire*

This research uses a quantitative method, namely by providing a list of questionnaire questions to consumers of cooking stoves in Purwokerto via Google Form which is sent via WhatsApp which is then processed by the data.

**4. Results**

*4.1 Validity and Reliability Test*

Test the validity of research instruments, can be summarized in the table as follows:

Table 2. Summary of Instrument Validity Testing Results

No.	Item	Result	Critical limit	Information
1.	Perceived Product Quality			
	PPQ1	0,828	0,3	Valid
	PPQ2	0,765	0,3	Valid
	PPQ3	0,774	0,3	Valid
	PPQ4	0,822	0,3	Valid
	PPQ5	0,823	0,3	Valid
	PPQ6	0,879	0,3	Valid
	PPQ7	0,691	0,3	Valid
2.	Perceived Service Quality			
	PSQ1	0,620	0,3	Valid
	PSQ2	0,809	0,3	Valid
	PSQ3	0,878	0,3	Valid
	PSQ4	0,806	0,3	Valid
	PSQ5	0,894	0,3	Valid
3.	Brand Image			
	BI1	0,857	0,3	Valid
	BI2	0,778	0,3	Valid
	BI3	0,765	0,3	Valid
4.	Warranty			
	GR1	0,757	0,3	Valid
	GR2	0,812	0,3	Valid
	GR3	0,757	0,3	Valid
	GR4	0,793	0,3	Valid
5.	Customer Satisfaction			
	CS1	0,781	0,3	Valid
	CS2	0,795	0,3	Valid
	CS3	0,701	0,3	Valid
	CS4	0,824	0,3	Valid
6.	Customer Loyalty			
	LOY1	0,730	0,3	Valid
	LOY2	0,746	0,3	Valid
	LOY3	0,763	0,3	Valid
	LOY4	0,731	0,3	Valid

The table shows that all items in all instruments are valid, because they have a positive total item correlation and  $p < 0.05$ . The results of reliability testing in this study can be summarized in the table as follows:

Table 2. Summary of Instrument Reliability Testing Results

No.	Instrumen	Cronbach's Alpha	Critical Limit	Information
1.	Perceived Product Quality	0,903	0,7	Reliabel
2.	Perceived Service Quality	0,864	0,7	Reliabel
3.	Brand Image	0,710	0,7	Reliabel
4.	Warranty	0,770	0,7	Reliabel
5.	Customer Satisfaction	0,769	0,7	Reliabel
6.	Customer Loyalty	0,721	0,7	Reliabel

The table above shows that all the instruments used in this study are reliable, because they have a Cronbach's Alpha value that is more than 0.7.

#### 4.2 Respondent Profile

The profiles of respondents in this study can be described in the table as follows:

Table 3. Respondent Profile

No.	Profil	f	%
1.	<b>Age</b>		
	19 - 25 years	4	3,3
	26 - 30 years	18	14,8
	31 - 35 years	48	39,3
	> 36 years	52	42,6
	Total	122	100,0
2.	<b>Work</b>		
	Civil Servants	34	27,9
	Private Employees	49	40,2
	Self-employed	39	32,0
	Total	122	100,0
3.	<b>Education</b>		
	Senior High School	46	37,7
	D3	24	19,7
	S1	50	41,0
	S2/S3	2	1,6
	Total	122	100,0
4.	<b>Long Using The Stove</b>		
	1 years	65	53,3
	2 years	40	32,8
	3 years	11	9,0
	4 years	6	4,9
	Total	122	100,0

The table above shows that, based on age, most of the respondents were > 36 years old, namely 52 respondents (42.6%), and at least 19-25 years old, namely 4 respondents (3.3%). Based on occupation, most of the respondents were private employees, namely 49 respondents (40.2%), and the least was civil servants, namely 34 respondents (27.9%). Based on education, most of the respondents had an undergraduate education, namely 50 respondents (41.0%), and at least a S2 / S3 education, namely 2 respondents (1.6%). Based on the length of time using the hob, mostly 1 year, namely 65 respondents (53.3%), and at least 4 years, namely 6 respondents (4.9%).

#### 4.3 Classic assumption test

Classic assumption testing in this research is conducted so that the results of the analysis meet the classical assumptions or requirements of the analysis. The classical assumption tests carried out in this study include the residual normality test, multicollinearity, heteroscedasticity, and

autocorrelation. In this study, there are two research models. The first model is the effect of perceived product quality, perceived service quality, brand image, and a guarantee on customer satisfaction. The second model is the effect of customer satisfaction on consumer loyalty.

- *Residual Normality Test*

The residual normality test in this study used the Kolmogorov - Smirnov test. The test results of the residual normality can be summarized in the table as follows:

Table 4. Summary of Results from Residual Normality Testing

Statistical Model I Model II

Statistik	Model I	Model II
KS-Z	0,061	0,071
P	0,200	0,200
Information	Description Normally	Description Normally

Table 4 shows all p values > 0.05, so it can be concluded that the residual values for model I and model II are normally distributed.

- *Multicollinearity test*

Multicollinearity testing in the study was only carried out on model I. This is because model II is a simple regression model, so there is no multicollinearity. Multicollinearity testing is done by looking at the Variance Inflation Factor (VIF) value. If the VIF value increases, it is suspected that there is multicollinearity. As a rule of thumb, if the VIF value exceeds the number 10, it is said that there is multicollinearity. The multicollinearity test of model I can be described in the table as follows:

Table 5. Multicollinearity Testing Model I

Variabel	VIF	Information
Perceived Product Quality	1,119	No multicollinearity
Perceived Service Quality	1,259	
Brand Image	1,311	
Warranty	1,345	

Table 5 shows that the VIF value for all variables has a VIF value that is less than 10. Based on this, it is concluded that in model I there is no multicollinearity.

- *Heteroscedasticity Testing*

Heteroscedasticity testing in the study was carried out using the Glejser test.

1) Heteroscedasticity Testing Model I

The results of heteroscedasticity testing in model I can be described in the table as follows:

Table 6. Heteroscedasticity Test Results Model I

Model	Koef. Reg.	SE	β	t	p
Constant	1,354	1,205		1,124	0,263
Perceived Product Quality	0,006	0,036	0,016	0,168	0,867
Perceived Service Quality	0,036	0,042	0,089	0,866	0,388
Brand Image	-0,032	0,060	-0,056	-0,535	0,594

Warranty	-0,054	0,052	-0,111	-1,041	0,300
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Table 6 shows that the test results show that all t values have  $p > 0.05$ , so it can be concluded that there is no heteroscedasticity in model I.

2) Heteroscedasticity Testing Model II

The results of heteroscedasticity testing in model I can be described in the table as follows:

Table 7. Heteroscedasticity Test Results Model II

Model	Koef. Reg.	SE	$\beta$	t	p
Constant	1,815	0,633		2,868	0,005
Customer Satisfaction	-0,050	0,039	-0,116	-1,285	0,201

Table 7 shows that the test results show that all t values have  $p > 0.05$ , so it can be concluded that there is no heteroscedasticity in model I.

- *Autocorrelation testing*

The autocorrelation test in this study was carried out using the Durbin-Watson test.

1) Autocorrelation Testing model I

The results of the autocorrelation test in model I can be described in the table as follows:

Table 8. Autocorrelation Test Results in Model I

Statistical	value	Description
Durbin-Watson statistic (d)	2,151	$d_U < d < (4 - d_U)$ $1,771 < 2,151 < 2,229$ There is no autocorrelation
$d_L$ (at n = 122 dan k = 4)	1,630	
$d_U$ (at n = 122 dan k = 4)	1,771	
$4 - d_U$	2,229	

Table 8 shows that in model I, the d value is 2.151. The  $d_U$  value for  $k = 4$  and  $N = 122$  is obtained at 1.771 and the  $4 - d_U$  price for 2.229. Based on the price of d which lies between  $d_U$  and  $4 - d_U$  ( $1.771 < 2.151 < 2.229$ ), it is concluded that in model I there is no autocorrelation.

2) Autocorrelation Testing Model II

The results of the autocorrelation test in model II can be described in the table as follows:

Table 9. Auto Statistical Value Description

Statistik	Nilai	Keterangan
Durbin-Watson statistic (d)	2,015	$d_U < d < (4 - d_U)$ $1,717 < 2,015 < 2,283$ There is no autocorrelation
$d_L$ (at n = 122 dan k = 1)	1,683	
$d_U$ (at n = 122 dan k = 1)	1,717	
$4 - d_U$	2,283	

Table 9 shows that in model II, the d value is 2.015. The  $d_U$  value for  $k = 1$  and  $N = 122$  is obtained at 1.717 and the  $4 - d_U$  price for 2.283. Based on the price of d which lies between  $d_U$  and  $4 - d_U$  ( $1.717 < 2.015 < 2.283$ ), it is concluded that in model II there is no autocorrelation.

#### 4.4 Hypothesis test

Tests are carried out using multiple linear regression in model I and simple regression in model II. The results of multiple linear regression testing in model I can be described in the table as follows:

Table 10. Multiple Linear Regression Testing Results Model I

Model	Koef. Reg.	SE	$\beta$	T	p
Constant	-1,351	1,924		-0,702	0,484
Perceived Product Quality	0,143	0,057	0,179	2,525	0,013
Perceived Service Quality	0,197	0,067	0,222	2,943	0,004
Brand Image	0,386	0,095	0,311	4,049	0,000
Warranty	0,274	0,083	0,257	3,295	0,001
R = 0,688 R <sup>2</sup> = 0,473 F = 26,239					0,000

Bound Variable = Customer Satisfaction

The results of simple regression testing in model II can be described in the table as follows:

Table 11. Simple Regression Testing Results Model II

Model	Koef. Reg.	SE	$\beta$	t	p
Constant	5,934	1,056		5,620	0,000
Customer Satisfaction	0,622	0,065	0,659	9,606	0,000
R = 0,659 R <sup>2</sup> = 0,435 F = 92,274					0,000

Bound Variable = Consumer Loyalty

Based on tables 10 and 11, the following hypothesis testing is carried out:

- First Hypothesis Testing, based on the results of multiple linear regression testing model I, the t-count value for the variable perceived product quality is 2.525 with p of 0.013. Based on a positive t-count and p value <0.05, it is concluded that perceived product quality has a positive and significant effect on customer satisfaction.
- Second Hypothesis Testing, based on the results of multiple linear regression testing model I, the t-count value for the perceived service quality variable was 2.943 with p of 0.004. Based on a positive t-count and p value <0.05, it is concluded that perceived service quality has a positive and significant effect on customer satisfaction.
- Third Hypothesis Testing, based on the results of multiple linear regression testing model I, the t-count value for the brand image variable is 4.049 with p of 0.000. Based on a positive t-count and p value <0.05, it is concluded that brand image has a positive and significant effect on customer satisfaction.
- Fourth Hypothesis Testing, based on the results of multiple linear regression testing model I, the t-count value for the guarantee variable is 3.295 with p of 0.001. Based on a positive t-count and p value <0.05, it is concluded that warranty has a positive and significant effect on customer satisfaction.
- Testing the Fifth Hypothesis based on the results of the simple regression test model II, the t-count value is 9,606 with p of 0,000. Based on a positive t-count and p value <0.05, it is concluded that customer satisfaction has a positive and significant effect on consumer loyalty.

## 5. Conclusion

### 5.1 Research Conclusion

From the research results, Variable brand image is the most dominant variable while the variable perceived product quality is the weakest variable in influencing customer satisfaction and subsequently influencing customer loyalty.

### *5.2 Managerial Implications*

Referring to the conclusion of the research, increasing brand image is the right solution for companies in increasing customer satisfaction and loyalty of hob stove products. It is hoped that these findings can be used as input for cookstove companies so that they can implement strategies in accordance with consumer expectations. To improve the brand image, strategic branding activities are expected to be carried out more frequently and this effort is intended to strengthen the brand image itself.

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