

**CORRELATION ANALYSIS OF PRODUCT QUALITY
IMPROVEMENT TOWARD CUSTOMER SATISFACTION OF
UNILEVER HOME CARE PRODUCTS**

By

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In partial fulfillment of the requirements for
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DECLARATION OF ORIGINALITY

I declare that this thesis, entitled “**Correlation Analysis of Product Quality Improvement toward Customer Satisfaction of Unilever Home Care Products**” is, to the best of my knowledge and belief, an original piece of work that has not submitted, either in whole or in part, to another university to obtain a degree.

Cikarang, Indonesia, January 31, 2012

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ABSTRACT

The effort of creating customer satisfaction through product quality is the background of this study. This research is held to evaluate how the impact of product quality is, in order to create customer satisfaction in terms of home care products. It needs an effort to create the product that customers need and customers want and this is task for the company to what is the best strategy to satisfy and influence the customer with the product that being offered. Thus, by knowing such factors, it is intended that the company use that to design the right strategy to win more customers. PT. Unilever Indonesia Tbk is a company that has produces many kinds of products while this research will only take its home care products to research. The objective of this research is to identify the product quality improvement factors that associated with customer satisfaction of Unilever home care products. It can be defined as the company strategy in order to improve the quality of product which can improve the value of brand as company asset. Total Quality Management has a big role in order to improve and maintain the product quality which is the object that is researched in this study. This research was designed using quantitative research which involves analysis of numerical data in an attempt to explain the matters observed. The data collected to questionnaires and was spread to 100 respondents in order to get more precise information to answer the matters observed. Likert scale is used to measure the data; it is by collect entire statement that has connection with the investigated problem. The respondents of this research are chosen from the citizen from Sunter Bisma 2 Blok B residence, these respondents are selected according to convenience sampling technique. Data reliability test is conducted after analyzing the data has been collected. It is meant to test the hypothesis by using SPSS software. The result has stated that product quality improvement is having a firm relationship with customer satisfaction which material quality has the strongest effect toward customer satisfaction while packaging design has the weakest effect.

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CHAPTER I

INTRODUCTION

1.1 Background of the Study

The business competitions that are faced by companies are getting tight than ever, it inquires the management of the company to be more accurate and effective in choosing the right competition strategy in order to win the competition itself. In order to win the competition, the management of the company must be able to propose and execute an excellent strategy that is able to create, maintain it, and improve customer satisfaction to the next level. It is expected that a customer loyalty toward the company's product will be generated after the strategy has been executed. The right and good strategy can bring the company to achieve the target and winning the market.

For a company, one of the key factors in creating good operating revenue are through the quality satisfaction served by the product (good or service). Therefore, a good quality product will determine the customer attitude in the process of building customer loyalty. The characteristic of a loyal customer is that they always repeat purchase and somehow they can be a good indirect marketer for the company.

Quality can attract customer to purchase company product. However, to create the quality inside the product with low cost, company need to have optimization to fulfill customer demand. By the following days, in a real life, to reach optimum result,

company will conduct certain strategies which are not only pricing and product strategy, but involving all divisions of the company. The Total Quality Management is the answer to reach the goal. Total Quality Management requires the strength of each company divisions, human resources and other resources working together under one vision. The result will be a good working life, a better product and satisfied customers.

The quality of products is one of the most important factors for an organization / entity to be able to survive in the competition. These demands can be met by using Total Quality Management approach. TQM can provide the most appropriate solution to produce the highest quality products, so it can affect the increased consumer confidence in the products and increase customer orders, which will affect significantly the company's operating revenues increased. PT. Unilever Indonesia Tbk (Unilever, herein-after) is a company that has produced toiletries product such as toothpaste, bath soap, shampoo, toothbrush, dishwashing soap, detergent and many more.

Unilever has positioned its product as the most hygienist product and has been promoted broadly through many kinds of media especially electronic media such as advertising in television and also through printed media such as magazines and newspapers. All this time Unilever is always being innovative on marketing its products, the wide range Unilever product offered to market proves it.

1.2 Company Profile

Unilever Group headquarters are based in London and Rotterdam; it is one of the leading companies in the world that produces daily customer goods. Most of their main operations manufacture consumer goods that are packed and branded; such as food and beverages, soap and detergent, and also cosmetics. Their other operation is to manufacture specialized chemical product

PT Unilever Indonesia Tbk, which is a part of Unilever Group, was established on 5 December 1933 as Lever's Zeepfabrieken N.V. by deed No. 23 of Mr. A.H. van Ophuijsen, notary in Batavia. This deed was approved by the Gouverneur Generaal van Nederlandsch-Indie under letter No. 14 on 16 December 1933, registered at the Raad van Justitie in Batavia under No. 302 on 22 December 1933 and published in the Javasche Courant on 9 January 1934 Supplement No. 3. The technology that was used by PT. Unilever Indonesia was resulted from the main research and development activities in Europe, America, and Asia. After it formed as a multinational company on 1929, Unilever has decided to set up the production units and markets in the Dutch East Asia Indies on 1933, where a soap company is set up in Batavia (Angke Factory). This soap was originally produced from local raw material.

The company listed 15% of its shares on the Jakarta Stock Exchange and Surabaya Stock Exchange following the approval from the Chairman of Capital Market Supervisory Board (Bapepam) No.SI-009/PM/E/1981 on 16 November 1981.

On 22 November 2000, the company entered into an agreement with PT Anugrah Indah Pelangi, to establish a new company namely PT Anugrah Lever (PT AL) which is engaged in the manufacturing, developing, marketing and selling of soy sauce, chili sauce and other sauces under the Bango, Parkiet and Sakura trademarks and other brands under license of the company to PT AL.

On 3 July 2002, the company entered into an agreement with Texchem Resources Berhad, to establish a new company namely PT Technopia Lever which is engaged in the distribution, export and import of goods under the Domestos Nomos trademark.

On 7 November 2003 Texchem Resources Berhad entered into a share sale and purchase agreement with Technopia Singapore Pte. Ltd, in which Texchem Resources Berhad agreed to sell all of its shares in PT Technopia Lever to Technopia Singapore Pte. Ltd.

At the company's extraordinary General Meeting on 8 December 2003, the company received approval from its minority shareholders to acquire the shares of PT Knorr Indonesia (PT KI) from Unilever Overseas Holdings Limited (a related party). This acquisition became effective on the signing date of the share sales and purchase agreement between the company and Unilever Overseas Holdings Limited on 21 January 2004. On 30 July 2004, the company merged with PT KI. The merger was accounted for using a method similar to the pooling of interest method. The company was the surviving company and after the merger PT KI no longer existed as separate

legal entity. This merger is in accordance with the approval of the Capital Investment Co-ordination Board (BKPM) in letter No. 740/III/PMA/2004 dated 9 July 2004.

On 2007, the company entered into a conditional agreement to buy the “Buavita” and “Gogo” brands of fruit-based Vitality drinks from Ultra. The transaction accomplished on January 2008.

The Company has six factories in Jababeka Industrial Estate, Cikarang, Bekasi, and two factories in the Rungkut Industrial Area, Surabaya, East Java, with headquarters in Jakarta. The products of the Company amounted to approximately 32 major brands and 700 types of product, marketed through a network involving approximately 370 independent distributors that reach hundreds of thousands of stores spread across Indonesia. These products are distributed through its own distribution center, additional warehouses, depots and other distribution facilities.

The company is engaged in the manufacturing of soaps, detergents, margarine, dairy based foods, ice cream, snacks, edible oil, tea based beverages, and cosmetic products. (www.unilever.co.id)

1.3 Problem Identified

Technology advances has triggered close competition between market players. Now, there are many new “Unilever kind” product brands that emerge in the market. The effort of creating brand loyalty of Unilever product is the focus of management that

must be conducted by PT. Unilever Indonesia in order to increase its market share. Therefore, in maintaining and increasing the quality of product, PT. Unilever Indonesia needs to assess the factor optimizing so they can keep brand loyalty of their company.

Brand loyalty and customer satisfaction can be gotten if the company continuously improve their product quality and do not increase the sell price significantly. In writer opinion, PT. Unilever has a strong foundation and structure in the company that can set the company stability even though they have another competitor or the competitor launch a new competitor product. One thing that PT. Unilever does is they rely on their Research Department division to maintain their product quality improvement.

The writer believes that product quality improvement can be considered as one of the strong factor that affects customer satisfaction. Because there is a huge possibility that a satisfied customer will repeat the purchase of the product that make them satisfied. However, the writer recognizes that Total Quality Management is also playing a huge role in the formation of product quality improvement. The fact is that nowadays there were a lot of people that like certain brand that always keep improving in the quality and can benefit the in economic terms. That is why the researcher chooses the topic of finding the correlation analysis of product improvement toward customer satisfaction of Unilever.

The writer acknowledges that Unilever has been in the market for a long period of time. Therefore, a measurement of customer satisfaction is very important to be executed. The motivation is to maintain and improve the brand loyalty of Unilever,

because a failure in maintaining the product quality can cause decrease in the products' sales and harm the brand.

1.4 Statement of the Problem

This research is about investigating factor that affect the customer satisfaction of Unilever home care products in Indonesia. The factor that the writer will test and determine is product improvement.

Problem statement proposed as the basis of the research into questions that will be answered on this research as the following

1. Is there any relationship between product quality improvements with the customer satisfaction?
2. Is product quality improvement having a big role to increase customer satisfaction?

1.5 Research Objectives

The objective of this study is to identify and analyze whether product quality improvements have strong relationship toward the customer satisfaction of Unilever. The result of this study is important to provide the company, especially the management of Unilever, as an additional information and consideration when implementing a Total Quality Management to improve the quality of the product which can make customer loyalty.

1.6 Significance of the Study

This study would serve as a valuable reference for PT. Unilever Indonesia, employees, and President University students and future researchers to provide more information about the dominant factors that influencing customer satisfaction when they begin to trust home care products. Not only that, acknowledge that Total Quality Management practice in the company can make the expected output, this study also can teach the students in President University to build a good team among the students while having assignment in team.

1.7 Theoretical Framework

This writer would like to use the concept that was suggested by expert to analyze the factors that affect customer satisfaction. However, product quality improvements is one of major factor that can have major effect to gain customer satisfaction in Unilever and many companies. Product quality improvements mainly concentrate on the process measurement and provide what is the customer expectation. Therefore, continuous improvement ensures complete customer satisfaction at every phase of the project. Product quality improvements and customer expectation can also determine the value of the product which affects market supply and demand. However, in this research the writer may focus on the major factor that can determine customer satisfaction which is explained by American Customer Satisfaction Index. The application of this theory is illustrated in Figure 1.1 on the next page

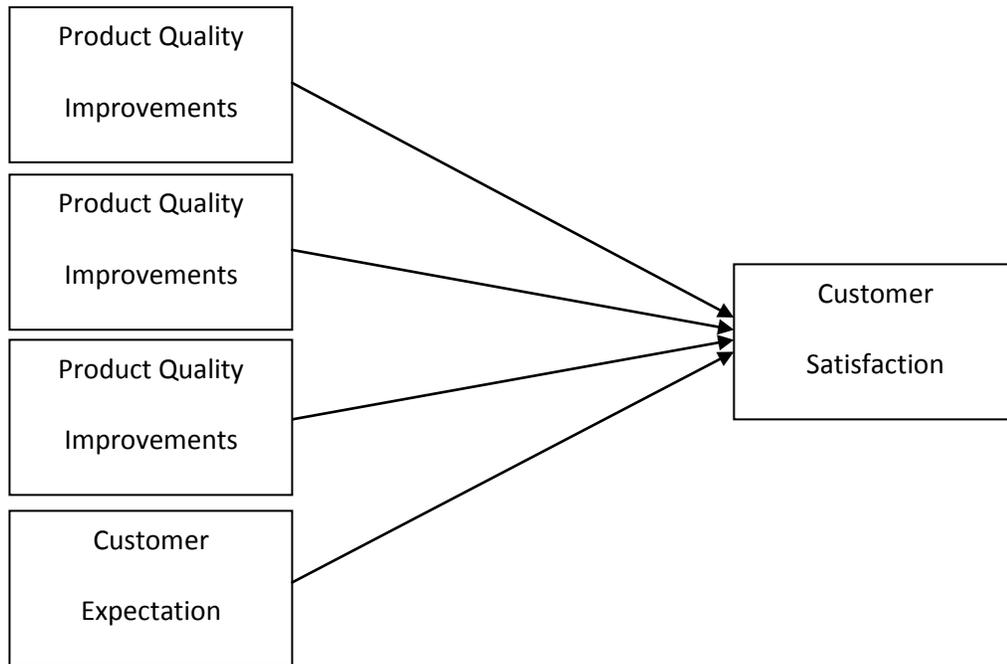


Figure 1.1 Theoretical Framework of the Research; Adopted from American Customer Satisfaction Index

On figure above, the writer is trying to find out if there is or isn't any relationship between product improvement (X) with customer satisfaction (Y).

1.8 Hypotheses, Scope and Limitation of the Study

1.8.1 Scope of the study

The scope of the study is to evaluate and analyze the influence between product quality improvements toward customer satisfaction of Unilever home care products.

It includes no further discussion about other factors that may influence customer satisfaction.

1.8.2 Hypotheses Development

As previously described in the problem statement, there will be a factor that will be analyzed in this study. The factor is product quality improvement. The writer considers that this factor has major influence that affects customer satisfaction of the product. From the explanation above, the hypotheses tested in this study can be developed as follows:

H₀: There is no relationship between product improvements quality toward customer satisfaction

If the significance test result that will be tested in chapter four is greater than 5%, then the writer will accept this hypothesis. Therefore, the alternate hypothesis that is developed by the writer in the study is as follows:

H₁: There is a relationship between product improvements quality toward customer satisfaction

It means there is a relationship between product quality improvements toward customer satisfaction if the significance test result is less than 5%

1.8.3 Limitations of the study

The limitation of the research is made because of making the topic and the result into more details. This research will focus into the dominant factor which is product quality improvement that influencing customer satisfaction. The respondent of this

research would be the people who have ever consumed or purchased Unilever home care product in North Jakarta.

1.9 Definition of Terms

Product Improvement	: A process which make the product become better
Customer Satisfaction	: Feeling of happiness or disappointed that comes from a comparison for expression of policy or result of production and hopes
Total Quality Management	: An approach to long-term success that views continuous improvement in all aspects of an organization as a process and not as a short-term goal. It aims to radically transform the organization through progressive changes in the attitudes, practices, structures, and systems.
Hypothesis	: Consist either of a suggested explanation for an event that is observed, or of a reasoned proposal suggesting a possible correlation between multiple observed event

Questionnaire

: A research instrument consisting of a series of question and other prompts for the purpose of gathering information from respondents

CHAPTER II

LITERATURE REVIEW

2.1 Theory about Total Quality Management

2.1.1 Quality

Nowadays, companies should think over about their mission and their business strategy deeper than before, because they are facing uncertainty and dynamic market when the competitor cannot be easily detected, and the customers become critical than ever because of the various kind of product or service that were offered. The quality control of the company should be able to fulfill the customer satisfaction through their product quality improvement better than the competitor does.

“A frequently used definition of quality of the product is “Delighting the customer by fully meeting their needs and expectations”. These may include performance, appearance, availability, delivery, reliability, maintainability, cost effectiveness and price.”(Edward Deming, 1986 p.58)

According to the statement above, quality starts with market research to establish the true requirements for the product or service and the true needs and expectations of the customers. Therefore, at this stage the focus of quality is on the improvement of end product. However, for an organization to be really effective, quality must maximize

the potential of all functions, all people, all departments and all activities and be a common language for improvement.

2.1.2 Total Quality

The concept of quality has extended from physically core products into the total value delivered to customers. Deming (1988) suggested that care of quality should be focused on the process rather than on the end product. After Deming proposed his ideas on quality management, people began to recognize that quality of product requires quality of “*everything*” in the organization. This has brought a significant change in respect of the responsibility on quality. Traditionally, the Quality Control or Quality Analysis Department was the one that bears all consequences (especially problems) resulted from quality performance of products or services delivered to customers. Nowadays, management must realize that everybody in the organization has a contribution directly or indirectly for producing quality products or services; hence quality demands corporate responsibilities. Quality must be viewed in a total context of an organization: quality of the process, quality of the people, quality of the organizational structure and system, quality of leadership and other aspects of the organization.

“Adopting appropriate principles of management, organizations can increase quality and simultaneously reduce costs (by reducing waste, rework, staff attrition and litigation while increasing customer loyalty). The key is to practice continual

improvement and think of manufacturing as a system, not as bits and pieces."(Edward Deming, 1990 p.60)

The definition of total quality is called total because it consists of 3 qualities:

1. *Quality of return* to satisfy the needs of the shareholders,
2. *Quality of products and services* to satisfy some specific needs of the consumer (end user) and
3. *Quality of life* to satisfy the needs of the people in the organization.

These three total qualities should be applied in every management that wants to make quality as their competitive advantage although the company may have more cost of production. Therefore, a modern company should be able to create a customer-oriented product and then keep the quality of the product that the customers want. A quality strategy that observes the customer satisfaction is the most important goal that should be achieved through a deep understanding of the customer and also by executing the right strategy and improving the quality of the product

2.1.3 Total Quality Management

"TQM is described as the mutual cooperation of everyone in an organization and associated business processes, in order to produce products and services which meet and hopefully exceed the needs and expectations of customers" (Dale, 1999).

TQM is a management philosophy that seeks to integrate all organizational functions (marketing, finance, design, engineering, and production, customer service, etc.) to focus on meeting customer needs and organizational objectives, (Khurram Hashmi, 2007)

TQM is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices

Ten points that guide implementation of TQM are:

1. The organization needs long-term commitment to constant improvement (Dean and Evans, 1994)
2. Adopt the philosophy of “zero defects/errors” to change the culture to the “right first time”.
3. Train to people to understand the customer-supplier relationships.
4. Do not buy products or services on price alone-look at total cost.
5. Recognize that improvement of the systems needs to be managed.
6. Adopt modern methods of supervision and training – eliminate fear.
7. Eliminate barriers between departments by managing the process-improve communications and teamwork.
8. Eliminate the following:

- arbitrary goals without methods;
- all standards based only on numbers;
- barriers to pride of workmanship; and
- Fiction – get facts by using the correct tools.

9. Constantly educate and retrain-develop the experts in the business.

10. Develop a systematic approach to manage the implementation of TQM

Total Quality Management (TQM) is an approach that seeks to improve quality and performance which will meet or exceed customer expectations. This can be achieved by integrating all quality-related functions and processes throughout the company. TQM looks at the overall quality measures used by a company including managing quality design and development, quality control and maintenance, quality improvement, and quality assurance.

After the First World War, quality inspection became more commonplace in manufacturing environments and this led to the introduction of Statistical Quality Control (SQC), a theory developed by Dr. W. Edwards Deming. This quality method provided a statistical method of quality based on sampling. Where it was not possible to inspect every item, a sample was tested for quality. The theory of SQC was based on the notion that a variation in the production process leads to variation in the end product. If the variation in the process could be removed this would lead to a higher level of quality in the end product.

2.1.4 Principles of TQM

TQM can be defined as the management of initiatives and procedures that are aimed at achieving the delivery of quality products and services. A number of key principles can be identified in defining TQM, including:

1. Executive Management – Top management should act as the main driver for TQM and create an environment that ensures its success.
2. Training – Employees should receive regular training on the methods and concepts of quality.
3. Customer Focus – Improvements in quality should improve customer satisfaction.
4. Decision Making – Quality decisions should be made based on measurements.
5. Methodology and Tools – Use of appropriate methodology and tools ensures that non-conformances are identified, measured and responded to consistently.
6. Continuous Improvement – Companies should continuously work towards improving manufacturing and quality procedures.
7. Company Culture – The culture of the company should aim at developing employees ability to work together to improve quality.
8. Employee Involvement – Employees should be encouraged to be pro-active in identifying and addressing quality related problems.

In Japan, they start to make improvement in their management area. Realizing that total quality management is the “way” to improve their business and have being their biggest competitive advantage that make the difference between one company to another company. Therefore, there are four ways of TQM in Japan:

1. *Kaizen* – Focuses on "Continuous Process Improvement", to make processes *visible, repeatable* and *measurable*.
2. *Atarimae hinshitsu* – The idea that "things will work as they are supposed to" (for example, a pen will write).
3. *Kansei* – Examining the way the user applies the product leads to improvement in the product itself.
4. *Miryokuteki hinshitsu* – The idea that "things should have an aesthetic quality" (for example, a pen will write in a way that is pleasing to the writer).

The point of total quality management is the satisfaction of consumer needs. In satisfying customers needs, each company will try to find its way to improving in many quality aspects and make that improvement as their competitive advantage. Therefore, a great company would focus their attention on improvement in quality and consumer needs.

2.2 Quality of Product

Product becomes an important instrument for achieving success and prosperity in the modern enterprise. Technological developments increased global competition, as well

as the needs and a desire of the market requires companies to develop products continuously. There are only two options, success in product development resulting in produce a superior product, or failure in achieving its business goals because the products are not able to compete in the market (Cooper and Kleinschmidt, 1987).

Cronin and Taylor (1992) in F. Selnes (1993) states that the performance criteria provide a better measure for theoretical models rather than using the size of the expectations, experiences and knowledge about product class. This will be an important determinant of how consumers assess the performance of the product or service. In the end, important attributes will also affect the attitude of satisfaction or dissatisfaction with the product

According to Brucks and Zeithaml (1987) in Zeithaml (1998) based on exploratory; there are six dimensions which are **easy to use, functionality, performance, durability, service, ability & prestige** that are used for various categories of durable food. Ahire, Golhare and Waller (1966: p.33) suggests four scale measurement of product quality:

1. The design of the product
2. Expectation of the product produced
3. Product durability
4. Product reliability

For home care product itself, to measure the quality of the product is based on three indicators above, there are the design of the product is attractive or not, the level of quality which is linked with price or product specifications which are linked with the product effectiveness.

A product can satisfy the consumer if the product is being considered able to meet or exceed the needs and expectations (Spreng et. 1996). Quality also is the most basic of consumer satisfaction and success in market competition. In fact, the quality is something that should be for all sizes of the companies, for the purpose of developing quality practice and demonstrate to consumers that they are able to find the expectation of higher quality (Tata et. Al, 2000). Research conducted by V. Mr Mital, WT. Ross and PM. Baldasare (1998) suggested that the negative performance of the product attributes have a negative effect on overall satisfaction and the positive performance of the product has a positive effect on the same attributes and overall satisfaction showed a reduction of sensitivity at the level of performance attributes.

2.3 Customer Satisfaction

Customer satisfaction, a business term, is a measure of how products and services supplied by a company meet or surpass customer expectation. It is seen as a key performance indicator within business and is part of the four of a Balanced Scorecard.

According to Engel, customer satisfaction is defined as the evaluation of consumption pasha that inter-chosen alternative at least get surpass or fulfill hope (1999, p.212)

Another argument from Mowen stated that customer satisfaction is defined as the overall attitude regarding a good or service after its acquisition and use (2000, p.512)

Based on definition above, it can be concluded that customer satisfaction is a level where needs, wants, and hopes from the customer will be fulfilled or surpassed through a transaction that will cause a purchase repetition or a loyalty.

In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy.

There are two types of satisfactory as the following:

1. Functional

It is obtained from the use or functional of a product, like getting a transportation facility after buying a car

2. Psychological

It is obtained from unshaped attribute of buying a product; such as acquire a high prestige if buying a Ferrari or Mercedes Benz

The used methods to measure customer satisfaction are as the following:

1. Complain and suggestion system

The company asks the customer to deliver their complain and suggestion, in which it will help the company to overcome the problem efficiently

2. Customer satisfaction survey

a. Directly reported survey

Ask directly to the customer whether they are very satisfied, satisfied, average, disappointed, or very disappointed with the product / service that was offered by the company.

b. Derived dissatisfaction

Ask the respondents to evaluate how big their hope is towards the product attributes and also how satisfy they are with the product.

c. Problem Analysis

Ask the respondents to write the problem that they found from the product or service provided by the company; include with the suggestions from the respondents about the products.

d. Importance of performance ratings

Ask the respondents to evaluate how important is an attribute for them and how good the attribute performance is.

3. Ghost shopping

The company hires some people to become potential buyers so that they can find the strength and weakness of their product and the competitors' product.

4. Lost customer analysis

Make contact with customers that have already stopped purchasing the product / service and research to know why that the customers stop buy the product.

There are some attributes that can create customer satisfaction based on Hawkins and Lonney (1997, Page 31); stated that the attributes that create customer satisfaction has known as "Big Eight" are as the following:

1. Value to Price Relationship

It will be determined by the value of the difference between what the customers and what he pays to receive it. That means a relationship between price and product value is decided by the difference between the values that was obtained by customer toward the product that they purchase

2. Product Quality

It is the sum total of all the quality components that compose the product and that contribute to the value that it adds. That means the quality from the whole components that form a product so that the product has an added value

3. Product Features

They are the physical components that yield the benefit

4. Reliability

It is the combined effect of product dependability, and it is related with how well a product works as good as its promised

5. Warranty

It used to offer or to refund or to maintenance the product after sales if the product has failed components after purchase. That means an offered to refund the purchase price or replace a defective product in a condition where the product had failed after the purchase

6. Response to and remedy of problems

It is the employees' attitude in reacting to solve the problems. It is the employees' response to complain or to help customer to solve the problems that happened

7. Sales experience

Consist of all interpersonal relationship between employees' and customer in communication that related to purchase. That means a personal relation between employees with customer especially on the communication that related to sales

8. Convenience of Acquisition

How easy a product can be obtained? It can be defined as the convenience that was given by manufacturer to the customer especially on the communication that related to sales

2.4 Brand Loyalty

Brand loyalty consists of a consumer's commitment to repurchase or otherwise continue using the brand and can be demonstrated by repeated buying of a product or service or other positive behaviors such as word of mouth advocacy.

Brand loyalty is more than simple repurchasing, however. Customers may repurchase a brand due to situational constraints (such as vendor lock-in), a lack of viable alternatives, or out of convenience. Such loyalty is referred to as "spurious loyalty". True brand loyalty exists when customers have a high relative attitude toward the brand which is then exhibited through repurchase behavior. This type of loyalty can be a great asset to the firm: customers are willing to pay higher prices, they may cost less to serve, and can bring new customers to the firm. For example, if Joe has brand

loyalty to Company A he will purchase Company A's products even if Company B's are cheaper and/or of a higher quality.

It has been suggested that loyalty includes some degree of pre-dispositional commitment toward a brand. Brand loyalty is viewed as multidimensional construct. It is determined by several distinct psychological processes and it entails multivariate measurements. Customers' perceived value, brand trust, customers' satisfaction, repeat purchase behavior, and commitment are found to be the key influencing factors of brand loyalty. Commitment and repeated purchase behavior are considered as necessary conditions for brand loyalty followed by perceived value, satisfaction, and brand trust. Fred Reichheld, one of the most influential writers on brand loyalty, claimed that enhancing customer loyalty could have dramatic effects on profitability. Among the benefits from brand loyalty — specifically, longer tenure or staying as a customer for longer — was said to be lower sensitivity to price. This claim had not been empirically tested until recently. Recent research found evidence that longer-term customers were indeed less sensitive to price increases.

2.5 Relationship between Product Quality Improvements with Customer Satisfaction

According to Juran and Grayna (1993), emphasis on customer satisfaction, broad application of quality concepts, and participation of all employees has given rise to a

new title – TQM. Total Quality Management is an approach to improving the competitiveness, effectiveness and flexibility of a whole organization. It is essentially a way of planning, organizing and understanding each activity.

Customer satisfaction includes the entire decision about the product or service that is able to meet the customer needs and wants. Therefore it is very important for a company to satisfy its customer because a satisfied customer will tell their experience to the other customer. It will bring an added benefit to the company and brand itself, It can also be defined that a customer satisfaction is the main or important variable that is caused by Total Quality Management so that customer satisfaction is a function of Total Quality Management. If the relationship between the Total Quality Management with customer is positive then if Total Quality Management level is high and it can increase the customer satisfaction.

CHAPTER III

METHODOLOGY

3.1 Study Method

This research used quantitative research methodology. Quantitative research is defined as research involving the use of the structured questions in which the response options have been predetermined and a large number of respondents is involved (Burns & Bush, 2003 p.204).

The quantitative method is used in this research because quantitative research can be used for the specific research; it's simply organized, the respond options have been predetermined so we can get the specific answer of the research, it also can be used for large population and the result.

3.2 Study Instruments

3.2.1 Data Gathering tools

The research framework below is the step to do the research. To get the data, this research is using interview and questionnaires. Questions that are used for interviewing are based on the purpose of this research. For questionnaires, question development is the first step to get the data/information. Question evaluation is needed to ensure the answer of the participant is relevant with the respondents' answer.

3.2.2 Data Source and Type

To seek a relationship between customer satisfaction and liking of the brand with brand loyalty, then those variables will be divided into 2 types; which are dependent variable (customer satisfaction variable) and independent variable (product quality improvement).

Dependent variable is the customer statement about the customer satisfaction for the Unilever product. Meanwhile, the independent variable is the product quality improvement of PT. Unilever Indonesia.

The data that will gather are

1. Primary data

Primary Data consists of information gathered for some specific purposes and primary data is also that u collects through researches, surveys and experiments. This data included short history data and organizational structure of the company. It is also included customer satisfaction data about price, product, package, advertisement and other function of Unilever cleaning product

2. Secondary data

Secondary data is consists of information that already exists somewhere having being collected for some purposes.

3.2.3 Data measurement

This study will use liker measurement technique. This scale is also often known as method of summated ratings because the rank of every answer or respond is added to get the total value.

Likert scale is a scale to discover characteristic according to certain measurements so that it can divide, grouped, and consecutive, this scale will give number or value of the object so that the existing characteristic of the object can be measured

Likert Scale

Very Satisfying / Important	5
Satisfying / Important	4
Normally	3
Unsatisfying	2
Very Unsatisfying	1

3.3 Sampling Design

To decide the total sampling in the study it is first by determine the minimum total sampling. In which the determination of minimum total sampling is using the formula on the next page

$$n = [p(1 - p) \times \left(\frac{z}{e}\right)^2]$$

Where:

n = sampling size

p = probability

z = variable value in standard normal curve that adjusted with the chosen faith

e = error

Example:

With the probability (p) = 0.2 and trustworthy level = 90% (z = 1.65); also error (e) = 10%; then:

$$\begin{aligned} n &= 0.2 (1 - 0.2) \times (1.65/0.1)^2 \\ &= 43.6 \end{aligned}$$

In this study, the quantity of sampling is about 43.6 and we will summarize it into 100 respondent. The bigger sampling is; then it would give accurate result.

3.4 Hypothesis Test

3.4.1 Statistic Test

Coefficient test with t table is using the formula; as the following:

$$t = \frac{r\sqrt{n} - 2}{\sqrt{(1 - r^2)}}$$

Follow t function with independent degree df=n

Evaluation Criteria:

If t evaluates > 0.05 then H_0 is accepted

If t evaluates < 0.05 then H_0 is rejected

3.4.2 Research Data Test

Data analysis and process should use tool gauge to find reliability level and data validity. It's also using an analysis tool and data process in order to answer the problem formulation.

1. Data Reliability test

In this study, reliability test was using Cronbach method. In this method, it is suggested that a reliable coefficient that called as alpha coefficient. This alpha coefficient is using the Formula as the following:

$$r = \frac{K}{k - 1} \left(\frac{1 - \varepsilon\theta^2}{\theta^2} \right)$$

Where:

r = the searching reliability coefficient

k = total question

θ^2 = questions variants

θ^2 = test score variants

Commonly the reliability ranges are as the following:

0.00 – 0.19: almost nothing

0.20 – 0.39: low reliability

0.40 – 0.69: moderate reliability

0.70 – 0.89: high reliability

0.90 – 1.00: most high reliability

2. Data Validity test

The questionnaire should be able to measure the mentioned variables that are meant to be measure, not the other variable. Because it is abstract, then it is possible if measurement scale that actually had measured the other variable. If this happened then the questionnaire is not valid, when a measurement scale should be valid.

Validity test is important to measure whether the test measures what researcher actually wished to measure

3.5 Data Analysis Method

Data analysis is the process of editing and reducing accumulated data to a manageable size, developing summaries, looking for patterns, and applying statistical techniques. For the data processing, the writer is using:

Double linear regression method

This method is use to find a relationship among variable if there are more than 2 variables with this formula:

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4$$

Where:

Y = Customer Satisfaction

X1 = Material Quality

X2 = Value of Price

X3 = Product Durability and

X4 = Packaging Design

a = constantan or inclination of regression line

b1 = inclination of regression line picture or regression coefficient X1

b2 = inclination of regression line picture or regression coefficient X2

b3 = inclination of regression line picture or regression coefficient X3

b4 = inclination of regression line picture or regression coefficient X4

3.6 Limitation of the Study

There are several limitations concerning this study, such as:

- a. The writer will spread the questionnaire in Sunter Bisma 2 residence and via Internet to people which used to use home care products in their daily life. There is a possibility that the respondent is not willing to fill in the questionnaire
- b. Because this study is only focused on sample consist of Indonesia citizens, the result may not applicable to the other region outside Indonesia
- c. Because of the limited time and sources, the writers realize that some fault may occur in the interpretation of the results.

CHAPTER IV

ANALYSIS OF DATA

AND INTERPRETATION OF RESULT

4.1 Result

4.1.1 Respondent Characteristics

The writer use questionnaire to get the data and has classified the respondent characteristics into three categories, which are gender, age and expense per month. The classification is meant to synchronize with the target market of Unilever home care products, which position itself as a family product.

Respondent Characteristic According to Its Gender

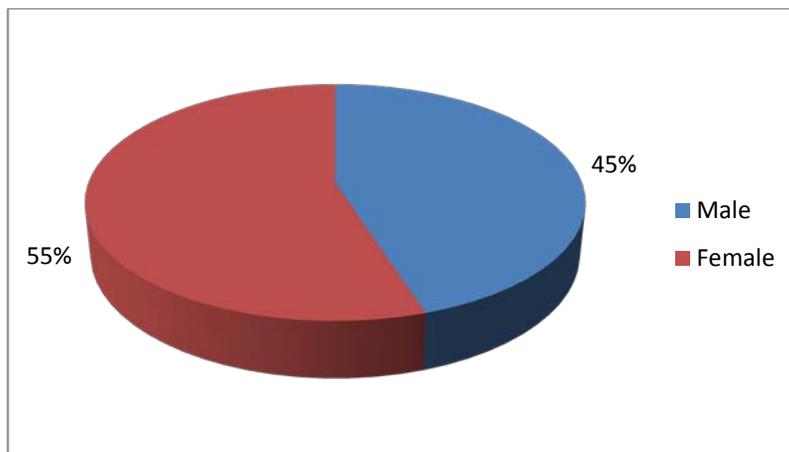


Figure 4.1 Respondent characteristic according to its gender

The figure 4.1 on the previous page shows that 55% of the respondents are women and the rest 45% respondents are men. The quite balance proportion of men and women might help the writer to know the opinion of Unilever home care products from each gender.

Respondent Characteristic According to Its Age

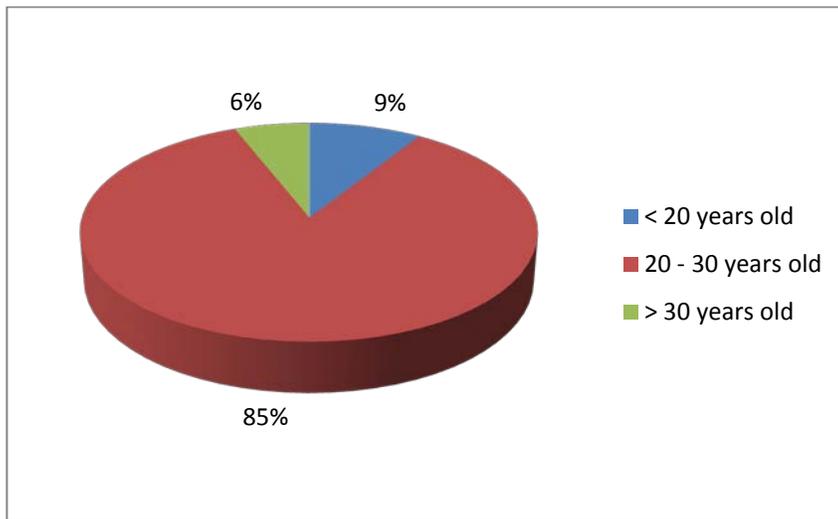


Figure 4.2 Respondent characteristic according to its gender

It is showed on figure 4.2 above that the respondents whose age is below 20 years old is 9%, the respondents which age is between 20 to 30 years old is 85% and the respondents which age is above 30 years old is 6%.

Respondent Characteristic According to Its Expenses

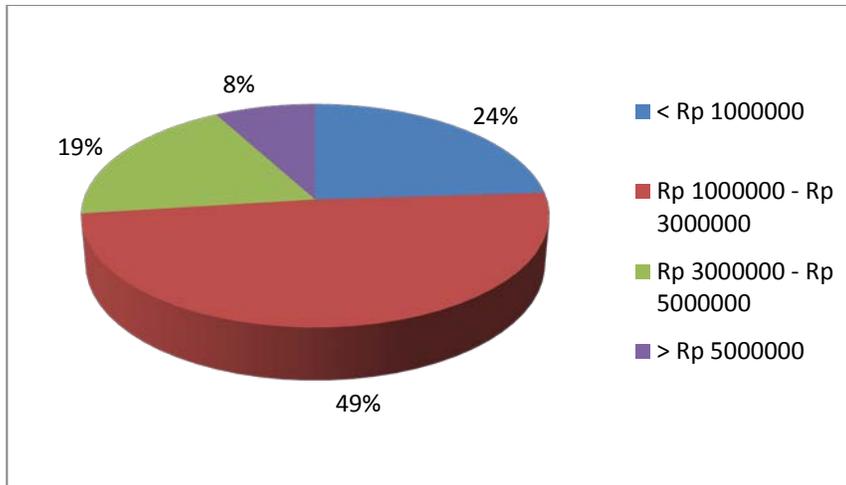


Figure 4.3 Respondent characteristic according to its expenses

Figure 4.3 has showed that 24% of the respondents are spending below IDR 1,000,000, then 49% respondents are spending between IDR 1,000,000 to IDR 3,000,000 and 19% respondents are spending between IDR 3,000,000 to IDR 5,000,000, and the last 8% respondents are spending more than IDR 5,000,000

4.1.2 Each Attribute Result

Reliability

From the table 4.1 below, it can be seen that no one of the respondent is strongly disagree, 2% of respondents are disagree, 31% of respondents are moderate, 53% of

respondents are agree, and the rest of 14% of respondents are strongly agree. It can be concluded that most of the respondents are qualified with the Reliability of Unilever home care products regarding its material.

Table 4.1 Satisfaction toward the Quality of Unilever Home Care Products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	2	2.0	2.0	2.0
	moderate	31	31.0	31.0	33.0
	agree	53	53.0	53.0	86.0
	strongly agree	14	14.0	14.0	100.0
	Total	100	100.0	100.0	

Source: Appendix

From the table 4.2 on the next page, it can be seen that no one of the respondent is strongly disagree, 9% of respondents are disagree, 19% of respondents are moderate, 65% of respondents are agree, and the rest of 7% of respondents are strongly agree. It can be concluded that most of the respondents choose Unilever home care products with the quality inside compared to Unilever rival product and it is proven by 65% of respondents that choose agree and 7% of respondents which strongly agree with the statement. In the writer opinion point of view, Unilever has established strong positioning in Indonesia market and it is shown from the good presentation of each

products of Unilever. The writer suggests that Unilever should minimize and improve its strength. Therefore, Unilever should maintain continuous improvement in their products which mean the management of Unilever should have improved their quality also. It helps Unilever to keep their position as a market leader in home cleaner products and set the gap with its rivals also.

**Table 4.2 Satisfaction toward the Quality of Unilever Home Care Products
Compared to Other Products**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid disagree	9	9.0	9.0	9.0
moderate	19	19.0	19.0	28.0
agree	65	65.0	65.0	93.0
strongly agree	7	7.0	7.0	100.0
Total	100	100.0	100.0	

Source: Appendix

From the table 4.3 on the next page, it can be seen that no one of the respondent strongly disagree with the statement. Meanwhile, 1% of respondent disagree, 24% of respondents are moderate, 65% of respondents are agree, and the rest 10% of respondents are strongly agree. Based on this result, most of the respondents admit that the price of Unilever home care products are worthy if they compare with its

quality and it is clearly show with 65% of respondents choose agree and 10% of respondents strongly agree with the statement. Based on this result, the writer thinks that Unilever always improve its quality in home care products and it is worthy to compare its quality with the price of the products. The writer suggest that the price of Unilever home care products should adjust with the buying power of Indonesia customers and the writer thinks that Unilever should put the right price for their home care products because some people trust that the more expensive of home care products relate with the better quality that the products provide; Unilever can do some promotion through a discount in some retail store if they release new product to keep their position that prioritize quality.

Table 4.3 Satisfaction toward the price of Unilever Home Care Products Compared to Its Quality

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid disagree	1	1.0	1.0	1.0
moderate	24	24.0	24.0	25.0
agree	65	65.0	65.0	90.0
strongly agree	10	10.0	10.0	100.0
Total	100	100.0	100.0	

Source: Appendix

Distribution Quality

From the table 4.4 below, it can be seen that no one of the respondent strongly disagree and disagree with the statement. Based on the questionnaire result, 8% of respondents are moderate, 55% of respondents agree, and the rest 37% of respondents strongly agree. This result concludes that the distribution of Unilever home care products have reach into the respondents household, it is shown by the result that the customers can notice Unilever home care products when they need to clean their home. The writer assumes that Unilever has a very large links to distribute its products especially home care products and it help to introduce their home care products to the people around Indonesia.

Table 4.4 Satisfaction toward the Quality of the Distribution of Unilever Home Care Products

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid moderate	8	8.0	8.0	8.0
agree	55	55.0	55.0	63.0
strongly agree	37	37.0	37.0	100.0
Total	100	100.0	100.0	

Source: Appendix

From the table 4.5 on below, it can be seen that no one of the respondent is strongly disagree and disagree with the statement. Based on the questionnaire result, 3% of respondents are moderate, 58% of respondents agree, and the rest 39% of respondents strongly agree. This result concludes that there are no difficulties to get Unilever home care products when the customers want to purchase it if they run out their needs of home care product. The importance of distribution is very significant because it will help the amount of Unilever home care products sales. It will be very ironic if the marketing department has an excellence work then the distribution unable to catch the marketing pace. The writer suggests that the distribution activity should keep the pace of marketing department especially for the new products because usually the promotion and advertising spread more rapidly than the distribution.

Table 4.5 Satisfaction toward the Presence of Unilever Home Care in the Daily Life

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid moderate	3	3.0	3.0	3.0
agree	58	58.0	58.0	61.0
strongly agree	39	39.0	39.0	100.0
Total	100	100.0	100.0	

Source: Appendix

From the table 4.6 on the next page, it can be seen that there are 2% of respondents are strongly disagree and 6% of respondents are disagree with the statement. It seems that Unilever level of distribution just one step ahead and if Unilever does not increase their quality of distribution in the future then the rival products can overcome the market of Unilever. In fact there are still 25% of respondents are moderate, 39% of respondents choose agree and 28% of respondents strongly agree with the statement. Based on this result, the writer thinks that Unilever need to improve its distribution quality in home care products so the customers keep look into Unilever home care products and create brand awareness and brand loyalty to its customer especially in some area where Unilever home products still unable to surpass its rivals.

**Table 4.6 Satisfaction toward the Easiness to purchase Unilever Home Care
Compared to the Other Home Care Products**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	2	2.0	2.0	2.0
disagree	6	6.0	6.0	8.0
moderate	25	25.0	25.0	33.0
agree	39	39.0	39.0	72.0
strongly agree	28	28.0	28.0	100.0
Total	100	100.0	100.0	

Source: Appendix

Quality of Packaging Design

From the table 4.7 on the next page, it can be seen that there are 3% of respondents are disagree with the statement while there are still 43% of respondents are moderate, 46% of respondents are agree, and the rest 8% of respondents are strongly agree. Based on this result, it is clear that Unilever home care products have an attractive design of packaging and its packaging design has a good effect to create brand awareness of Unilever home care products because home care products design should easy to remember and have cheerful design. The writer suggests Unilever could renew its design of packaging but it should never leave the original style and

characteristics in each design. It is important to make the loyal customer not confuse because of its new design.

Table 4.7 Satisfaction toward the Design of Unilever Home Care Products Packaging

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid disagree	3	3.0	3.0	3.0
moderate	43	43.0	43.0	46.0
agree	46	46.0	46.0	92.0
strongly agree	8	8.0	8.0	100.0
Total	100	100.0	100.0	

Source: Appendix

From the table 4.8 on the next page, there are 2% of respondents are strongly disagree and 4% of respondents are disagree with the statement while there are still 44% of respondents are moderate, 46% of respondents are agree, and the rest 4% of respondents are strongly agree. Based on this result, it is clear that Unilever home care products have a good quality of packaging and its packaging quality has remarkable effect to represent the quality of Unilever home care products because home care products are related with chemicals and it is very dangerous if it gets eaten or directly contacts with eyes. The writer suggests Unilever should maintain its

packaging quality to keep the customer satisfaction and loyalty especially with their refill products that some customers may not buy first the main packaging product.

Table 4.8 Satisfaction toward the Quality of Unilever Home Care Products Packaging

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	2	2.0	2.0	2.0
disagree	4	4.0	4.0	6.0
moderate	44	44.0	44.0	50.0
agree	46	46.0	46.0	96.0
strongly agree	4	4.0	4.0	100.0
Total	100	100.0	100.0	

Source: Appendix

From the table 4.9 on the next page, it can be seen that there are 1% of respondents is disagree with the statement while there are still 33% of respondents are moderate, 56% of respondents are agree, and the rest of 10% of respondents are strongly agree. This result shows Unilever home care products assist customer with a brief explanation to use the products. The respondents admit that the instructions on Unilever home care products are really helpful. The writer thinks that Unilever should maintain its excellence advantage and so the newbie customers can use the products properly. This simple thing can bring Unilever an advantage to excess their market

and it can define Unilever as a professional company that care about efficiency so it can reduce confusion to the newbie customers.

Table 4.9 Satisfaction toward the Instruction on the Packaging of Unilever Home Care Products

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	1	1.0	1.0	1.0
Moderate	33	33.0	33.0	34.0
Agree	56	56.0	56.0	90.0
strongly agree	10	10.0	10.0	100.0
Total	100	100.0	100.0	

Source: Appendix

Durability of Products

From the table 4.10 on the next page, the result can be seen that 40% of respondents are moderate, 53% of respondents agree, and the rest of 7% of respondents are strongly agreed. Based on this result, it is clear that most of the respondents agree with the statement that Unilever home care products have a good durability so the customers can choose Unilever home care products as the products that they need and they want if they look for home care products. The durability of Unilever home care product has a good effect to the sales of Unilever. It creates benefit to the customer

because they can choose and pick what they really need and what they really want. It also creates the brand awareness of Unilever home care products because usually when the customers have chosen one brand and they are quite satisfied, they will repeat buy the products.

Table 4.10 Satisfaction toward Durability of Unilever Home Care Products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Moderate	40	40.0	40.0	40.0
	Agree	53	53.0	53.0	93.0
	strongly agree	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

Source: Appendix

From the table 4.11 on the next page, it can be seen that no one of the respondent is strongly disagree and disagree with the statement. Based on the questionnaire result, 21% of respondents are moderate, 69% of respondents agree, and the rest of 10% of respondents strongly agree. This result concludes that the respondents satisfy with the aroma (scent) of Unilever home care products. Unilever have reached a good respond in term of the aroma of its products, it has shown a positive indicator that should be maintained and increased by the company.

Table 4.11 Satisfaction toward the Aroma of Unilever Home Care Products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Moderate	21	21.0	21.0	21.0
	Agree	69	69.0	69.0	90.0
	strongly agree	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

Source: Appendix

From the table 4.12 on the next page, it can be seen that no one of the respondent is strongly disagree, while 4% of respondents disagree with the statement. Based on the questionnaire result, 45% of respondents are moderate, 44% of respondents agree, and the rest of 7% of respondents strongly agree. This result concludes that most of the respondents satisfy with the aroma durability of Unilever home care products. Unilever have reached a good respond related to the aroma of its products whether it is about smell or its durability. Unilever home care products have shown a positive indicator that should be maintained and increased by the company. Unilever company management should maintain the performance of their home care products to have more satisfaction from more customers.

Table 4.12 Satisfaction toward the Aroma Durability of Unilever Home Care Products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	4	4.0	4.0	4.0
	moderate	45	45.0	45.0	49.0
	agree	44	44.0	44.0	93.0
	strongly agree	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

Source: Appendix

Continuous Improvement

From the table 4.13 on the next page, the results shows that only 6% of the respondents are disagree with the statement, while 43% of respondents are moderate, 39% of respondents agree, and the rest of 12% of respondents strongly agree. Based on the result, it is very important for the company to maintain and improve the quality of the products. Unilever has many competitors and there is one point that can bring Unilever stay on top position is if Unilever can maintain their quality.

Table 4.13 Brand Loyalty is coming from the Quality of the Brand

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	6	6.0	6.0	6.0
Moderate	43	43.0	43.0	49.0
Agree	39	39.0	39.0	88.0
strongly agree	12	12.0	12.0	100.0
Total	100	100.0	100.0	

Source: Appendix

From the table 4.14 on the next page, the results shows that only 1 of the respondent is disagree with the statement, while 34% of respondents are moderate, 52% of respondents agree, and the rest of 13% of respondents strongly agree. Based on the result, the products of Unilever are well-known because of their quality. The company knows the importance of product quality and only well-organized company that can maintain and improve the quality of the products from the past until now. Company need to have a strong team like Unilever because a strong company who has strong management team can stay as a market leader for a long time.

**Table 4.14 The Quality of Unilever Products Maintained Well or even Increased
from the Past until Now**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	1.0	1.0	1.0
	Moderate	34	34.0	34.0	35.0
	Agree	52	52.0	52.0	87.0
	strongly agree	13	13.0	13.0	100.0
	Total	100	100.0	100.0	

Source: Appendix

4.1.3 Validity Test

The total questionnaire that was spread are 100 sets and if there are some questionnaire that are not coming back or not official then the writer will repeat spreading the questionnaire until it reach 100 qualified questionnaire. The collected questionnaire will be processed by the writer to provide answer in the test variable validity, which is

Validity test is use to test whether the collected data is valid or not. Validity test is by comparing corrected item total correlation with R table, if the corrected item is bigger

than R table then it could be concluded as valid, but if this corrected item smaller than R table then it could be concluded as invalid (Singgih Santoso, 1999 p.227).

Table 4.15 Validity Test

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q1	49.28	30.204	.469	.864
Q2	49.37	28.882	.622	.856
Q3	49.23	29.916	.616	.857
D1	48.78	30.214	.557	.860
D2	48.71	31.743	.372	.868
D3	49.22	28.456	.476	.867
P1	49.48	29.161	.634	.855
P2	49.61	29.897	.485	.863
P3	49.32	29.735	.595	.858
DU1	49.40	31.030	.433	.865
DU2	49.18	30.876	.514	.862
DU3	49.53	29.605	.565	.859
I1	49.50	28.394	.636	.855
I2	49.30	30.192	.489	.863

From table 4.15 above, it shows that the quantity of the corrected item – total correlations are bigger than R table (0,195), then it can be concluded that the questionnaire is valid

4.1.4 Reliability Test

The reliability test will be performed after the validity test is being tested and the result whether it is valid or not; if all of the test are valid then the reliability test can be performed correctly

Based on Hair et Al (1998,p.118); stated that a data can be concluded as reliable if the data reliability result test is showing numbers above Alpha Cronbach which is 0.70, so the research can be concluded to be reliable. The reliability tests are as the following:

Table 4.16 Reliability Test

Cronbach's Alpha	N of Items
.870	14

4.2 Correlation Result Analysis

From the SPSS output, the achieved multiple regression equation is:

$$Y = 0,201 + 0,321x_1 + 0,094x_2 + 0,181x_3 + 0,039x_4$$

This multiple regression equation can be described as follows:

- Constant of 0,201; means if Material Quality (X1), Price (X2), Durability (X3), and Design Packaging (X4) are 0 so the value of the customer satisfaction is 0,201
- The relation aim and regression coefficient of X1, X2, X3, X4 variable are +0,321, +0,094. +0,181, +0,039. This symbol (+) means the direction between Material Quality (X1), Price (X2), Durability (X3), and Design Packaging (X4 means if the Company increase quality, consider the price through the product quality, maintain the durability and increase the quality of the packaging then the customer satisfaction will also increase. Meanwhile, the meaning of regression coefficient of material quality is if one material quality increases 0,321 then it will increase 0,321 in the customer satisfaction. The other variables such as X2, X3, X4 which also have a positive direction means the same which if everyone between X2, X3,) toward Customer Satisfaction (Y) are positive. This positive direction X4 increase then the customer satisfaction (Y) will also increase.

Table 4.17 Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate	Durbin-Watson
1	.644 ^a	.415	.391		1.000	2.223

Source: Appendix

To find out whether there is any relations or not between any variables which the writers take that determine the product quality to maximize the next improvement product quality which is material quality, pricing strategy, durability of product and design of packaging could be seen from the value of R in SPSS output result which is about 64.4%; it means that there is a strong relationship between those 4 factors in terms of to increase product quality (Sugiyono, 2007).

The affect of product quality improvement toward the customer satisfaction (could be seen on the value of R square in SPSS output result) which is about 41.5%; it means that those 4 factors which determine the product quality has an effect to customer satisfaction by 41.5% and the rest 58.5% had been affected the other factor that hadn't be examined in this study.

The result of this correlation analysis describe that product quality improvement have a big role to maximize the level of customer satisfaction which mean that will be the one that really affect the customer opinion about the product. Unilever, in this case, makes a strong brand power with their quality of product and it really helps the company to continue the market penetration or set the position of its brand because they have the advantage if they can conquer people heart through their product quality. The writer also assumes that the other factor that can determine the customer satisfaction is service quality which is not examined in this study.

4.2.1 T-Test Hypothesis

With these decisions:

If t evaluate > 5% then Ho is accepted

If t evaluate < 5% then Ho is rejected

4.18 Table of Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.201	.953		.211	.833
	Material Q	.321	.079	.406	4.072	.000
	Price	.094	.073	.226	2.280	.024
	Durability	.181	.089	.202	2.035	.045
	Design	.039	.067	.052	.579	.564

Source: Appendix

From the table 4.18 above, the result can be seen in which the significant level is $0.000 < 5\%$, so it can be define that Ho for material quality, price and durability are rejected. That means that there is a relationship between material quality, price and durability as the writer conclude as product quality toward customer satisfaction. On the table above, design as product quality is not have a significant relationship with customer satisfaction based on product quality section.

Based on the theory from chapter 2, it is already confirmed that the variable material quality, price, durability, and design proved to be valid and reliable but only material quality, price and durability that have a relationship with customer satisfaction.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

The objective of this study is to analyze product quality improvement effect toward customer satisfaction of Unilever home care products. The four factors are considered by the writer to have connection with customer satisfaction which is material quality, value of price and product durability that has strong connections. Meanwhile, the packaging design only has a little connection with the quality improvement that customer want for home care products. From the analysis that was done by the writer, it can be concluded that there is a relationship between product quality improvement and customer satisfaction.

From the data which has been gathered and calculated with the formula, the researcher found the results as follows:

1. It could be seen on the value of R square in SPSS output result which is about 64,4% that means there are a strong relationship between product quality improvement and customer satisfaction. While the contribution of product quality improvement toward customer satisfaction are about 41,5% (it could be seen on

the value of R square in SPSS result) and the rests are about 58,5% had been affected by another factors that were not examined in this study.

2. Regression coefficient result between 4 factors of product quality improvements towards customer satisfaction is $Y = 0,201 + 0,321X1 + 0,094X2 + 0,181X3 + 0,039X4$. The direction of X1 variable (material quality), X2 variable (value of price), X3 variable (product durability) and (packaging design) are +0,321, +0,094, +0,181, +0,039. All of variable have positive symbol, it means the direction between material quality, value of price, product durability and packaging design toward customer satisfaction are positive. The positive direction could be defined if at least one of the material qualities, value of price, product durability or packaging design has increase then the customer satisfaction will increase. Meanwhile, the meaning of regression coefficient of material quality of 0,321 is that every single improvement of material quality then it will also increase the customer satisfaction. In this research, the writer find that every factor that has been examined has a positive direction, it means that every factor has an ability to increase the product quality improvement and as the result it will affect the customer satisfaction. Meanwhile, from the information in this research, it shows that material quality has the strongest impact which affects the product improvement whereas the packaging design has the weakest impact.

From the explanation above, it is clear that based on the research, it has reject the H0 and accept the alternate hypothesis. The writer has concluded that there is a

relationship between product quality improvement and customer satisfaction of Unilever home care products.

5.2 Recommendations

Based on the data and the research result, the researcher purposes several recommendations as stated below.

- a. The result given can promote and thorough understanding of product quality improvement which has a role in order to maximize customer satisfaction. By improving the quality of the product, Unilever can maintain customer satisfaction level which can create brand loyalty in their mind. Unilever should have a better improvement and break the barrier of innovation in order to establish their position as market leader in home care industries. It can be done if they have a good management. Improvement in their quality of management and system are very important to make the company align with the goal, vision and mission.

- b. Unilever should facilitate the knowledge about the Unilever vision and mission so the management can know what are the goal and the big picture in Unilever. Unilever should concentrate to accomplish their goal and company objective into a positive result. Unilever should raise their standard every day

in quality; it will impact on their product so Unilever can establish their position although they face many competitions in home care industries.

- c. Unilever should improve their material quality in order to improve their product quality to create customer satisfaction. According on the research result, material quality contributes the big role if the company wants to improve their product quality in home care industries. Since material quality becomes the most influential factor in product quality improvement, Unilever should show their material quality while they promote and advertise their home care product. By showing its material, it will give better product knowledge to the customer and it will be a positive value of Unilever.

This research is by no means complete or comprehensive and potential implications for future research. Some recommendations for future research are detailed as following:

1. The future researcher can lengthen the research period more than this research to obtain more comprehensive result
2. The further researcher may study other factors that affect customer satisfaction in future studies
3. The future researcher can also consider other alternative, method, and instruments other than this research

LIST OF REFERENCES

Text Books

- Arshad, Lincoln. 2000. *Ekonomi Manajerial*, 3rd edition. Yogyakarta: BPFE
- Salvatore, Dominic. 2005. *Ekonomi Manajerial dalam Perekonomian Global*. Jakarta: Salemba Empat
- Tjiptono, Fandy, and Diana Anastasia. 2003. *Total Quality Manajemen*. Yogyakarta: Penerbit ANDI
- Liu, MC, 2005. *The Multi Dimensional and Hierarchical Structure of Perceived Quality and Customer Satisfaction*, *International Journal of Management*, Vol. 22, No. 3
- Parasuraman, A, 1997. *Reflections on Gaining Competitive Advantage Through Customer Value*, *Journal of the Academy of Marketing Science*, Vol. 25, No. 2, p.154-161
- Kotler, Philip, 2004. *Marketing Management, Analysis, Planning, Implementation and Control*, 9th Edition. New Jersey: Prentice Hall International Inc.
- Verbeke, Alain, 2009. *International Business Strategy: Rethinking the Foundations of Global Corporate Success*, 3rd edition. New York: Cambridge University Press
- Juran, J.M, and Frank Gryna, 2001. *Quality Planning and Analysis*, 4th edition. New York: McGraw-Hill

Schiffman, Leon G, and Leslie Lazar Kanuk, 2000. *Consumer Behavior* 7th edition. Upper Saddle River, New Jersey: Prentice-Hall, Inc.

Zikmund, William G, 2003. *Business Research Method*, 7th edition. Cincinnati: Thompson

Priyatno, Duwi, 2011. *Buku Pintar Statistik Komputer*, 1st edition. Yogyakarta: Mediakom

Priyatno, Duwi, 2010. *Paham Analisa Statistik Data dengan SPSS*, 1st edition. Yogyakarta: Mediakom

Internet

www.wikipedia.org

www.unilever.co.id

www.unilever.com

www.google.com

Questionnaire

The Impact of Product Quality Improvement toward Customer Satisfaction

1. Questionnaire No. : _____ (filled by researcher)
2. Gender : Male / Female (eliminate unnecessary)

(circle your answer)

3. What is your age?
 - a. < 20 years
 - b. 20-30 years
 - c. > 30 years
4. Expenses per month
 - a. < Rp 1.000.000
 - b. Rp 1.000.000 – Rp 3.000.000
 - c. Rp 3.000.000 – Rp 5.000.000
 - d. > Rp 5.000.000

Keterangan: STS = Strongly Disagree

TS = Disagree

N = Neutral

S = Agree

SS = Strongly Agree

1. I satisfy with the quality of Unilever home care products such as Sunlight, Rinso, Molto
 - STS
 - TS
 - N
 - S
 - SS
2. The quality of Unilever home care products are better than similar products
 - STS
 - TS
 - N
 - S
 - SS
3. I satisfy with the price of Unilever home care products because its price is proportional with its quality
 - STS
 - TS
 - N
 - S
 - SS
4. I am satisfied with the distribution of Unilever home care products so that I could easily buy the products
 - STS
 - TS
 - N
 - S
 - SS
5. I can get Unilever home care products such as Sunlight, Rinso, Molto easily
 - STS
 - TS
 - N
 - S
 - SS

6. I do not have any difficulties to get Unilever home care products easily when I need it than with home care compared to products from other brands
 STS TS N S SS
7. I am satisfied with the packaging of Unilever home care products such as Sunlight, Rinso, Molto, so I easily recognize the product
 STS TS N S SS
8. The packaging of Unilever home care products such as Sunlight, Rinso, Molto are guaranteed quality and not easily damaged
 STS TS N S SS
9. I am helped with an explanation of how to use the product on the packaging of Unilever home care products
 STS TS N S SS
10. The fragrance of Unilever home care products such as Sunlight, Rinso, Molto are very varied and much-loved
 STS TS N S SS
11. Unilever home care products have a good fragrance
 STS TS N S SS
12. The aroma of Unilever home care products are long lasting
 STS TS N S SS
13. I was interested when Unilever released new home care products because its quality is guaranteed
 STS TS N S SS
14. The quality of Unilever home care products are maintained or even increased from the past to the present
 STS TS N S SS
15. Do you have any suggestions for Unilever home care products?

Thank You ☺

Kuesioner

Dampak peningkatan kualitas produk Unilever kepada kepuasan pelanggan

1. Nomor Kuesioner : _____ (Diisi periset)
2. Jenis Kelamin : Laki-laki / Perempuan (Coret yang tidak perlu)

(Lingkari jawaban anda)

3. Berapakah umur anda?
 - a. < 20 tahun
 - b. 20-30 tahun
 - c. > 30 tahun
4. Berapakah pengeluaran anda per bulan?
 - a. < Rp 1.000.000
 - b. Rp 1.000.000 – Rp 3.000.000
 - c. Rp 3.000.000 – Rp 5.000.000
 - d. > Rp 5.000.000

Keterangan: STS = Sangat Tidak Setuju

TS = Tidak Setuju

N = Netral

S = Setuju

SS = Sangat Setuju

1. Saya merasa puas dengan kualitas dari produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto
 STS TS N S SS
2. Kualitas dari produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto lebih baik dari kualitas produk dengan merk-merk sejenis
 STS TS N S SS
3. Saya merasa puas dengan harga dari produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto karena sebanding dengan kualitasnya
 STS TS N S SS
4. Saya merasa puas dengan distribusi dari produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto sehingga saya dengan mudah membelinya

- STS TS N S SS
5. Saya bisa mendapatkan produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto dengan mudah
 STS TS N S SS
6. Saya tidak kesulitan untuk mendapatkan produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto dengan mudah ketika saya membutuhkannya dibanding dengan produk-produk pembersih dari merk lain
 STS TS N S SS
7. Saya merasa puas dengan kemasan dari produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto sehingga saya mudah mengenalinya
 STS TS N S SS
8. Kemasan dari produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto terjamin kualitasnya dan tidak gampang rusak
 STS TS N S SS
9. Saya cukup terbantu dengan penjelasan cara penggunaan produk pada kemasan produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto
 STS TS N S SS
10. Aroma produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto sangat bervariasi dan banyak digemari
 STS TS N S SS
11. Aroma produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto harum
 STS TS N S SS
12. Aroma produk-produk pembersih Unilever seperti Sunlight, Rinso, Molto tahan lama
 STS TS N S SS
13. Saya tertarik ketika Unilever mengeluarkan produk-produk pembersih baru Unilever karena kualitasnya sudah terjamin
 STS TS N S SS
14. Kualitas dari produk-produk pembersih Unilever tetap terjaga atau malah meningkat dari dahulu sampai sekarang
 STS TS N S SS
15. Komentar tambahan untuk produk-produk pembersih Unilever?

Terima Kasih ☺

SPSS Output

Reliability Analysis

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded ^a	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.870	14

Validity Analysis

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q1	49.28	30.204	.469	.864
Q2	49.37	28.882	.622	.856
Q3	49.23	29.916	.616	.857
D1	48.78	30.214	.557	.860
D2	48.71	31.743	.372	.868
D3	49.22	28.456	.476	.867
P1	49.48	29.161	.634	.855
P2	49.61	29.897	.485	.863
P3	49.32	29.735	.595	.858
DU1	49.40	31.030	.433	.865
DU2	49.18	30.876	.514	.862
DU3	49.53	29.605	.565	.859
I1	49.50	28.394	.636	.855
I2	49.30	30.192	.489	.863

Frequency Table

Q1

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid disagree	2	2.0	2.0	2.0
moderate	31	31.0	31.0	33.0
agree	53	53.0	53.0	86.0
strongly agree	14	14.0	14.0	100.0
Total	100	100.0	100.0	

Q2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	9	9.0	9.0	9.0
	moderate	19	19.0	19.0	28.0
	agree	65	65.0	65.0	93.0
	strongly agree	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

Q3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	1	1.0	1.0	1.0
	moderate	24	24.0	24.0	25.0
	agree	65	65.0	65.0	90.0
	strongly agree	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

D1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	moderate	8	8.0	8.0	8.0
	agree	55	55.0	55.0	63.0
	strongly agree	37	37.0	37.0	100.0
	Total	100	100.0	100.0	

D2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	moderate	3	3.0	3.0	3.0
	agree	58	58.0	58.0	61.0
	strongly agree	39	39.0	39.0	100.0
	Total	100	100.0	100.0	

D3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	2.0	2.0	2.0
	disagree	6	6.0	6.0	8.0
	moderate	25	25.0	25.0	33.0
	agree	39	39.0	39.0	72.0
	strongly agree	28	28.0	28.0	100.0
	Total	100	100.0	100.0	

P1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	3	3.0	3.0	3.0
	moderate	43	43.0	43.0	46.0
	agree	46	46.0	46.0	92.0
	strongly agree	8	8.0	8.0	100.0
	Total	100	100.0	100.0	

P2

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	2	2.0	2.0	2.0
disagree	4	4.0	4.0	6.0
moderate	44	44.0	44.0	50.0
agree	46	46.0	46.0	96.0
strongly agree	4	4.0	4.0	100.0
Total	100	100.0	100.0	

P3

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid disagree	1	1.0	1.0	1.0
moderate	33	33.0	33.0	34.0
agree	56	56.0	56.0	90.0
strongly agree	10	10.0	10.0	100.0
Total	100	100.0	100.0	

DU1

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid moderate	40	40.0	40.0	40.0
agree	53	53.0	53.0	93.0
strongly agree	7	7.0	7.0	100.0
Total	100	100.0	100.0	

DU2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	moderate	21	21.0	21.0	21.0
	agree	69	69.0	69.0	90.0
	strongly agree	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

DU3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	4	4.0	4.0	4.0
	moderate	45	45.0	45.0	49.0
	agree	44	44.0	44.0	93.0
	strongly agree	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

I1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	6	6.0	6.0	6.0
	moderate	43	43.0	43.0	49.0
	agree	39	39.0	39.0	88.0
	strongly agree	12	12.0	12.0	100.0
	Total	100	100.0	100.0	

I2

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid disagree	1	1.0	1.0	1.0
moderate	34	34.0	34.0	35.0
agree	52	52.0	52.0	87.0
strongly agree	13	13.0	13.0	100.0
Total	100	100.0	100.0	

Correlation Analysis

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.644 ^a	.415	.391	1.000	2.223

a. Predictors: (Constant), TD, TDU, TP, TQ

b. Dependent Variable: TI

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67.463	4	16.866	16.870	.000 ^a
	Residual	94.977	95	1.000		
	Total	162.440	99			

a. Predictors: (Constant), TD, TDU, TP, TQ

b. Dependent Variable: TI

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.201	.953		.211	.833
	TQ	.321	.079	.406	4.072	.000
	TP	.094	.073	.226	2.280	.024
	TDU	.181	.089	.202	2.035	.045
	TD	.039	.067	.052	.579	.564

a. Dependent Variable: Tl

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.04	9.71	7.34	.825	100
Residual	-2.071	2.526	.000	.979	100
Std. Predicted Value	-2.787	2.875	.000	1.000	100
Std. Residual	-2.072	2.527	.000	.980	100

a. Dependent Variable: Tl