

Application of The Quality Function Deployment (QFD) Concept in Developing Yale Bodycare Skin Care Product

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ABSTRACT: In the face of intense competition, one of the conditions that must be met by the company is trying to achieve the goal of satisfying consumers. Companies generally want consumers to last forever, retaining consumers is not an easy task, considering that changes can occur at any time. Owners who are aware of this will of course always try to improve quality and then maintain the quality of their products. A good manager will provide quality products that meet consumer expectations. This requires companies to compete in terms of quality strategies that are given appropriately and in accordance with consumer expectations. This research aims to develop products through the application of the concept of Quality Function Deployment to Yale Bodycare products. This research procedure adapts the ADDIE development model which consists of five stages which include Analysis, Design, Development, Implementation and Evaluation. The population in this study are consumers of Yale Bodycare products. The data used in this study are primary and secondary data with a total sample of 33 respondents. Yale Bodycare products produced have not met the level of consumer desires. This can be seen from the gap that occurs between performance and consumer interests/desires which are still high. Targets that have not been maximized must continue to be achieved, because it is a strong consideration for consumers in deciding the choice of beauty products, especially Bodycare.

Keywords: Quality Planning through QFD (House Of Quality), Total Quality Management (TQM), Customer's Requirements

In the Makassar city, Yale Bodycare is a bodycare company that makes body lotion for skin care and wellness. This company solely makes body lotion, and the production method is still manual. In terms of manufacturing capability, Yale Bodycare makes a little amount of body lotion each month based on requests from entering customers. In addition, although this firm is handled by the owner himself, he still utilizes a modest amount of cash for manufacturing scale. This is done to prevent buildup in warehouses that hold items to be sold. Yale Bodycare goods are less appealing in terms of substance, texture, size, packaging, and price because of the proliferation of bodycare products on the market. Given the current business climate and the same manufacturing, Yale Bodycare is rarely in demand by clients. An action or owner's plan to increase the quality of items produced by creating goods with greater functionality and content that are in demand by consumers is known as "quality improvement." In order for the final product to survive and continue to be in demand by clients, the owner of this business must create a fresh breakthrough, such as a product redesign or innovation on a new product. Companies do operations known as Voice of the Customer (VoC), or list what consumers want, employing tools or quality improvement methodologies to learn what the customers need and desire.

High product quality will provide one online business a competitive edge over another. As a result, internet enterprises will produce high-quality goods that will be in high demand. According to preliminary findings, entrepreneurial students are more likely to work in the cosmetics

I. INTRODUCTION

industry because they have a propensity to desire to look well and follow societal trends in beauty. Additionally, the most important factor driving the sale of cosmetics is the low beginning capital need in the realm of beauty. By generating movement power, you may inspire someone's passion for their task, making them want to collaborate, work efficiently, and combine all of their efforts in order to succeed (Mughtar et al., 2018)

Consumer satisfaction is the degree to which a product meets or exceeds a customer's expectations and then compares its performance and assessment after the product has been acquired. To ensure that their products satisfy their clients, the owner must understand what the market wants. Utilizing the Quality Function Deployment (QFD) approach is one way to determine the needs and desires of the client. The Quality Function Deployment (QFD) process is a method for understanding customer needs and wants. The objective is to guarantee that the finished product can satisfy customers. Consumer statements or truths may be used in research utilizing the QFD approach to identify gaps in product and service quality, requiring technical remedial steps to enhance or expand the company's resources.

Objective

The objective of this development research is to determine the product requirements that Yale Bodycare product buyers anticipate once the Quality Function Deployment (QFD) concept has been used in product development.

II. LITERATURE REVIEW

a. Entrepreneurship

Entrepreneurship is a scientific field that examines attitudes, skills, and behavior in the face of various problems in life. Because entrepreneurship has a comprehensive and actual body of knowledge, two concepts venture start-up and venture growth and its own object the capacity to create it is taught as a scientific field (Nurikasari, 2016). Since 1975, the term "entrepreneur" has been used to describe Indonesians who are self-employed. Sanskrit is where the word "self-employed" originated. Wira, Swa, and Sta make up the three syllables in the word "entrepreneur." The word "wira" refers to a superior human person who is virtuous, courageous, big-hearted, brave, a hero, a pioneer, a warrior for development, and who has a noble character (Syam, 2018). Both swa and sta are words for "alone." As a result, entrepreneurship might be seen as a sign of intelligent people who can rise above their circumstances. Absolute superhuman capable of living beyond his own

capacity and even able to provide work for others. Research has shown that self-confidence (self-efficacy) significantly influences interest in entrepreneurship (Rahmatullah et al., 2020) According to the belief (Rakib, 2010) that an entrepreneur who wants to be successful in managing and increasing his business performance must have good communication skills, an entrepreneur always has and strives to enhance his talents. An entrepreneur is also someone who starts a new business despite all the risks and uncertainties in order to make money and grow their company. They can be recognized by their aptitude for seizing favorable opportunities as well as their capacity to effectively use and manage the resources at their disposal (Springmann et al., 2016)

b. Application of The Concept of Quality

The primary determinant in determining whether a product will be bought or utilized by a consumer is the quality of the product (goods/services). Therefore, a crucial element in the company's success is the quality of the product. The six variables that affect quality are sometimes referred to as the six M plus one I (Pratiwi et al., 2016). These variables are man, money, method, material, machines, market, and information.

c. Quality Dimension

Actually, the consumer is aware of what they want and may specify the level of quality they want in a product (quality dimension). David A. Garvin, a quality control expert, first presented the 8 (eight) quality dimensions in 1987. Later referred to as Garvin's 8 Quality Dimensions, David A. Garvin's Eight Quality Dimensions included the following performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality (Pratiwi et al., 2016).

d. Consumer Satisfaction

Satisfaction is the level of consumer feelings that are obtained after consumers do/enjoy something. Thus it can be interpreted that consumer satisfaction is the difference between what consumers expect (expectation value) and the situation provided by the company in an effort to meet consumer expectations (Handoko, 2017). Several kinds of methods in measuring customer satisfaction are as follows complaint and suggestion system, ghost shopping and lost customer analysis.

e. Quality Function Deployment

The QFD approach is a technique

frequently utilized to raise the caliber of a variety of goods and services (Dantes et al., 2013). In order to identify customer demands and translate them into pertinent technical requirements that each functional area and organizational level can comprehend and act upon, a systematic method or mechanism known as quality function deployment (QFD) is used. Using the Quality Function Deployment (QFD) technique, the 'voices of customers' may be included into the design process when creating goods or services. Actually, QFD is a method for businesses to recognize and satisfy customers' wants and wishes for the goods and services they provide.

f. QFD Planning and Development Stage

The QFD method's phases for planning quality are as follows: Identify the audience, Establish the requirements and desires of the consumer, identify the preferred quality problem, establish the desired quality issue's relative priority, recognize product aspects that indicate quality, make a QFD matrix or chart, establish the technological significance and competitive assessment (Prabowo & Zoelangga, 2019).

g. QFD Tools

Several instruments are frequently utilized while putting the QFD approach into practice. These include particular tools used in QFD applications, such as those listed below affinity diagrams, interrelationship diagram, tree diagrams and matrix diagrams (Purnomo, 2021).

h. Skin Care Products

Not only facial care, for women body care is no less important to take good care of. It's the same with facial skin, if we don't take good care of it then skin problems such as dry and oily will appear. Therefore, everyone, both women and men, needs to use a series of body care products so that the skin can always be smooth and healthy. If we talk about bodycare, did you know that bodycare is not only about body lotion. Here are various body care products that you can use to make your skin look healthy and smooth : body lotion, body gels, body cream, body butter, body oils, body mist, body milk and body serum (Afif&Aswati, 2022).

III. METHODOLOGY

a. Research Approach

Development research, which results in new goods, is the sort of research methodology employed in this study. The research and development approach is a research technique used to create a specific product and evaluate its efficacy

(Sugiyono, 2016). This study applies the idea of quality function deployment to Yale Bodycare goods in order to create new products. The five steps of the ADDIE development model Analysis, Design, Development, Implementation, and Evaluation are adapted in this study process.

b. Research Design

In order to ascertain the level of customer satisfaction with Yale Bodycare products, this research is a descriptive study that use both qualitative and quantitative descriptive methodologies in the form of statistics. The QFD method's variables—consumer interest (important to customers), customer satisfaction performance, competitor satisfaction performance, goals (goals), improvement ratios, sales points, raw weights, and normalized row weights are used in this study to determine the variables. All of these aspects are required to develop a customer satisfaction plan that will maximize the company's capacity to boost product sales while upholding customer contentment. This comprises benchmarking or target setting, customer satisfaction performance objectives, technological replies, the connection between technical responses and customer demands, and technical correlation.

c. Research Instrument

Interviews, questionnaires, and documentation studies were the instruments utilized to measure the variables in this study.

d. Data Analysis

In this study, two types of data analysis approaches were used: quantitative methods and qualitative methods. Statistical analysis is used as a quantitative tool to quantify consumer satisfaction. Researchers from Yale Bodycare were observed and interviewed for the qualitative methodology. In this study, two entrepreneurship instructors and one specialist in skin care and health served as validator subjects. There were 30 enterprising students in all who participated in the product testing, including 15 male and 15 female students. 33 individuals made up the study's subject population.

IV. RESULT AND DISCUSSION

a. Research Result

Based on the findings of surveys and interviews with 33 informants who provided replies (answers) to a preliminary questionnaire for attribute assessment. Voice of the Customer (VoC) is the screening phase in the Quality Function Deployment (QFD) process. It was determined that the 25 themes that were discussed during the VoC

stage might be divided into three categories that attracted significant feedback, namely, product, packaging, and cost. 33 informants in all took part as samples and supplied answers to the final questionnaire that was submitted. To determine how Yale Bodycare products should be created to satisfy consumer preferences, the replies will be reviewed.

1. Analysis

The findings of the investigation are taken into account while developing Yale Bodycare products and serve as recommendations. A needs analysis was conducted as part of the analysis. A needs analysis is conducted to identify and categorize the issues the owner or owner of the product to be produced is experiencing. After doing a requirements analysis, it was found that the body lotion's texture was problematic from a product standpoint since it was too watery, which made it simpler for the skin to dry out again after application. Given that the proprietor of Yale Bodycare created the product logo using a Canva template, there are flaws in the product design that make it appear marketable in terms of packaging. As a result, it is inevitable that there will be similarities in the choice of product logos. There are identical product options for men and women in terms of variety. Consumers do not have any size expectations for other packaging based on their need. There are no instructions for using the product, no information on the ingredient composition, no information on the expiration date, no production address, no BPOM label, no permit from the health department, and lastly, the price given cannot be affordable to all groups and is unable to compete with other similar products because it is too expensive and exceeds the current market stand.

2. Design

Regarding the product

After doing a requirements analysis, it was found that the body lotion's texture was problematic from a product standpoint since it was too watery, which made it simpler for the skin to dry out again after application. Customers must utilize it repeatedly as a result. To produce the desired product, researchers conduct development by using specific substances. Variations are the upcoming product development. several product options for both men and women. It is obvious that men's skin is 25% thicker than women's skin. The male hormone testosterone, which contributes to the thickening of the skin, is the cause of this. Men's skin is also thicker and more durable than

women's skin. Therefore, in order to enhance product performance and provide outcomes that were pleasing to customers, researchers included product versions designed exclusively for males by using more collagen composition than goods for women. The product's hygiene degrades when used by directly touching the surface, so the researcher developed a packaging product that was originally in the form of a jar to become a pump bottle. This third development is in the shape and size used by Yale Bodycare, which is currently still inefficient.

With regard to packaging

The researchers changed the logo design on the product in terms of brand design by creating a new design consisting of changing colors to branding after conducting a needs analysis and discovering packaging deficiencies related to the logo design on Yale Bodycare products. The second improvement entails finishing the section by including information on the composition of the ingredients in the packaging, the production date to the expiration date, the ingredients or benefits in the product packaging, the storage instructions, the usage instructions, and the size of the product.

When it comes to cost

Improvements to the pricing attribute also include offering costs that are reasonable for all socioeconomic groups and consistent with the advantages offered by Yale Bodycare products.

3. Development

The end outcome of employing the Quality Function Deployment technique to create Yale Bodycare goods. The following is a comparison of Yale Bodycare products before and after using the Quality Function Deployment concept to the ADDIE development model

Products

The size and logo of the product are the most obvious differences, and the new product offers two different variants in place of the old product's single, gender-neutral variant. The change in the logo itself was inspired by consumer feedback on the product. may be used by both men and women, and the product's most recent packaging innovation employs a pump bottle instead of the previously utilized jar, which can be perceived as decreasing product hygiene.

Packaging

The former product just provided a brand name, hence the packaging difference may be

considered as being highly important. While new items list the manufacturer, size, advantages, directions for use, composition, recommended storage conditions, and expiration date.

Price

After reviewing customer concerns, the owner changed the pricing given for the prior product, which was IDR 175,000/250 ml, to IDR 150,000/250 ml and IDR 275,000/500 ml.

4. Implementation

The development stage continues into this

stage. All previously produced product designs are now implemented following revision. The following tools are used in the implementation stage : basin 1000 ml, funnel, spoon, gloves, manual mixer, scissors and pump bottles. And the following materials used in the implementation stage : lotion, skin nourishing cream, moisturizing cream, collagen, vitamin whitening, pearl cream, facial essens and approaches to work. The first stage is weighing the materials that have been previously made in accordance with the instructions of the recipe for body lotion, which are shown in the following table :

Table 1. Composition of Materials

Bahan	Komposisi Bahan
Lotion	400 ml
Skin nourishing cream	120 ml
Moisturizing cream	250 ml
Collagen	100 ml
Vitamin whitening	100 ml
Pearl cream	60 ml
Facial essens	60 ml

Next, pour 60 cc of pearl cream into a glass container or basin. Put 8 to 10 cm of water in a medium saucepan before adding the glass bottle with the pearl cream. Over medium-high heat, gently bring the water to a boil until the pearl cream melts (approximately 10 to 15 minutes). If this is the case, add the melted pearl cream to a dish and refrigerate. To get the required texture, combine all the ingredients and whisk with a stick blender. Use a funnel to transfer the mixture to the pump bottle when all the components have been well combined. Install the product package label

following that. the final design of Yale Bodycare products following modifications based on customer feedback.

5. Evaluation

The following phase involved doing a small group trial with 33 informants, including 15 male and 15 female entrepreneurship students, 2 entrepreneurship instructors, and 1 skin and beauty specialist. The following table shows the results of the response questionnaire data from the product trial:

Table 2. Product Feasibility Level

Value Interval	Category
81-100	SL
61-80	L
41-60	CL
21-40	KL
1-20	TL

$$\begin{aligned}
 \text{Product Eligibility Level} &= \frac{J_{\text{Total Score Obtained}}}{\text{Total Ideal Score}} \times 100\% \\
 &= \frac{2.745}{4.125} \times 100\% \\
 &= 66,54\%
 \end{aligned}$$

33 people participated in the experiment, and based on their comments, it was determined that Yale

Bodycare products were viable with a high proportion of 66.54%. The questionnaire's informant replies indicated that Yale Bodcare's goods were practical.

b. Quality Function Deployment

1. Voice of Customer (VoC)

Regarding the overall characteristics associated with bodycare, researchers asked 25 questions. Respondents were asked to rate their answers on a scale of 1 to 10, with 1 being the least important and 10 being the most significant. The

data in table 3 is the mean score of their responses to the 25 attributes posed. The top 20 criteria are ranked by highest score and selected for further study since they are believed to be consumer priorities

Table 3. VoC Survey Result

Items	Score	\bar{x}	Weight	Rank
safe material	302	9.15	4,12	4
name and address	309	9.36	4,22	2
product content	296	8.96	4.04	9
comfort	315	9.54	4.30	1
texture	294	8.90	4.01	12
product variants	280	8.48	3.82	23
expired date	297	9	4.06	8
interesting shape	298	9.03	4.07	7
material composition	290	8.78	3.96	16
health permit	303	9.18	4,14	3
BPOM	299	9.06	4.08	6
price is affordable	294	8.90	4.01	12
distinctive aroma	288	8.72	3.93	19
storage instructions	286	8.66	3.90	21
size as desired	275	8.33	3.75	24
competitive price	289	8.75	3.94	18
quality material	292	8.84	3.98	14
packaging color	288	8.72	3.93	19
elegant product	292	8.84	3.98	14
quality design	296	8.96	4.04	9
packaging recycling	263	7.96	3.59	25
manufacture date	290	8.78	3.96	16
cheap price	285	8.63	3.89	22
beautiful packaging	296	8.96	4.04	9
comparable prices	302	9.15	4,12	4

Based on the content of the material being asked, the 20 attributes that received the highest score can be grouped into three variables, namely product, packaging, and price.

2. Instrument Testing Results

The results of testing the first question's validity for the product variable are shown in the

table below. A value of more than 0.344 indicates that the first question is valid or that the product variable has accuracy and precision in its measuring function, whereas a value of less than 0.344 indicates that the first question has poor measurement ability and is therefore invalid (Yusup&Febrianawati, 2018).

Table 4. Validity Test Results

Variable	Items	r-value	Information
Product	1	0,175	Gugur
	2	0,654	Valid
	3	0,225	Gugur
	4	0,250	Gugur
	5	0,390	Valid
	6	0,445	Valid
	7	0,592	Valid
	8	0,415	Valid
	9	0,739	Valid

	10	0,780	Valid
	11	0,798	Valid
Packaging	12	0,818	Valid
	13	0,701	Valid
	14	0,759	Valid
	15	0,803	Valid
	16	0,650	Valid
	17	0,742	Valid
	18	0,495	Valid
Price	19	0,340	Gugur
	20	0,681	Valid

The stability of the measuring function is assessed in addition to the instrument's measurement capacity. According to the test findings, the product variable had an average alpha coefficient of 0.905, the packaging variable of

0.897, and the pricing variable of 0.903. When it acquires more than 0.6, it has sufficient stability to be deemed dependable (Yusup&Febrianawati, 2018)

Table 5. Reliability Test Results

Variable	Alpa Cronbach	Information
Product	0,905	Reliable
Packaging	0,897	Reliable
Price	0,903	Reliable

3. Customer Requirement

a. Product

Consumer reactions to items are determined by three factors: product diversity, shape/size, and the absence of dangerous components. The three product qualities are rated by respondents on a scale of 3.12 to 4.09, on average. The above product attribute response score is between a scale of 3 and 5, which, on a scale of 1 to 5, indicates a reaction that is more than moderate or high enough. In general, respondents regarded Yale Bodycare goods as having a wide range of alternatives for size (big, medium, and small), and they generally thought that they were free of harmful ingredients, albeit not always.

b. Packaging

To gauge consumer reaction to Yale Bodycare product packaging, there are eleven criteria. Regarding the style, the supplies employed, and the underlying creative worth. clarity of textual information on product packaging, such as the brand name and BPOM labels, the expiration date, the halal label, the Health Department permission, and the directions for storage. It may be claimed that respondents give package qualities ratings ranging from 2,90 to 3,93 on average.

c. Price

Price comprises features that are inexpensive, comparable with rival products, and in line with quality. Response scores for these three qualities were 3.60 and 3.75, respectively.

4. Customer Requirement Weight

Table 6. Customer Reuirement Weigh

Variable	Attribute	Weight	%
Product	Product diversity	3,93	6,24
	Shape/Size	4,06	6,44
	No hazardous materials	4,21	6,68
Packaging	Design	3,87	6,14
	Material	4,30	6,82
	Artistic value	3,81	6,05
	Material composition	3,84	6,09
	Out of date information	3,78	6,00
	Content information	4,00	6,35

	Brand and address information	3,90	6,19
	BPOM label	3,93	6,24
	Department of Health	3,87	6,14
	Color selection	3,81	6,05
	Storage instructions	3,57	5,66
Price	According to content	4,00	6,35
	Competitive	4,09	6,49

5. Relationship between Customer Requirements and Technical Response

Technical replies that match the criteria in their work descriptions indicate that they have high levels of responsibility or close relationships. The level below is regarded as moderate, while the level

below that is regarded as weak.

Strong relationships in QFD have a weight of 9 and the symbol. Weak relations are given a weight of 1 and a symbol of in this study, whereas intermediate relations are given a weight of 3 and a symbol of O.

Table 7. Relationship between Technical Response and Attributes

Quality Characteristics (a.k.a "Functional Requirements" or "Hows")	Product Appearance			
	Raw Material	Flavor	Promotion	Packaging
Product diversity	O	⊖	⊖	⊖
Shape/Size	O	O	⊖	⊖
No hazardous materials	⊖	⊖	⊖	
Design			⊖	⊖
Material			O	⊖
Artistic value			⊖	⊖
Material composition			⊖	⊖
Out of date information			▲	⊖
Content information			⊖	⊖
Brand and			O	⊖

address information						
BPOM label	⊖		⊖		⊖	
Department of Health	⊖				⊖	
Color selection	○		○		⊖	
Storage instructions					○	
According to content			⊖	○		▲
Competitive	⊖	⊖	⊖	○	○	○

6. Business Targets

Table 8. Business Targets

No	Technical Response	Target
1	Product quality	The shape and size of Yale Bodycare are attractive according to consumer needs, and are free from all kinds of impurities (hygenic)
2	Raw material	High quality raw materials, contain many benefits for the body, halal, do not contain harmful chemicals
3	Flavor	It feels comfortable when used, and the composition of the ingredients is just right
4	Marketing	Participating in beauty exhibitions, distributing brochures, pamphlets and the internet, giving free samples to consumers before consumers buy.
5	Packaging	Attract consumers' interest, luxurious, not easily damaged, the characteristics of the packaging, the packaging does not contain any aged materials
6	Product Appearance	Interesting, many product variants, many flavors.

7. Target Achievement Difficulty Level

Table 9. Target Achievement Difficulty Level

No	Technical Response	Target	Degree of difficulty
1	Product quality	The shape and size of Yale Bodycare are attractive according to consumer needs, and are free from all kinds of impurities (hygenic)	0
2	Raw material	High quality raw materials, contain many benefits for the body, halal, do not contain harmful chemicals	0
3	Flavor	It feels comfortable when used, and the composition of the ingredients is just right	4
4	Marketing	Participating in beauty exhibitions, distributing brochures, pamphlets and the internet, giving free samples to consumers before consumers buy.	5
5	Packaging	Attract consumers' interest, luxurious, not easily damaged, the characteristics of the packaging, the packaging does not contain any aged materials	4
6	Product Appearance	Interesting, many product variants, many flavors.	4

8. Technical Response Priority Calculation

A technical response's priority was determined using the previously given information. The technological reaction to product quality

calculation is explained in the paragraphs that follow. Relative weight of customer requirements = Importance Level / Total Importance Level x 100.

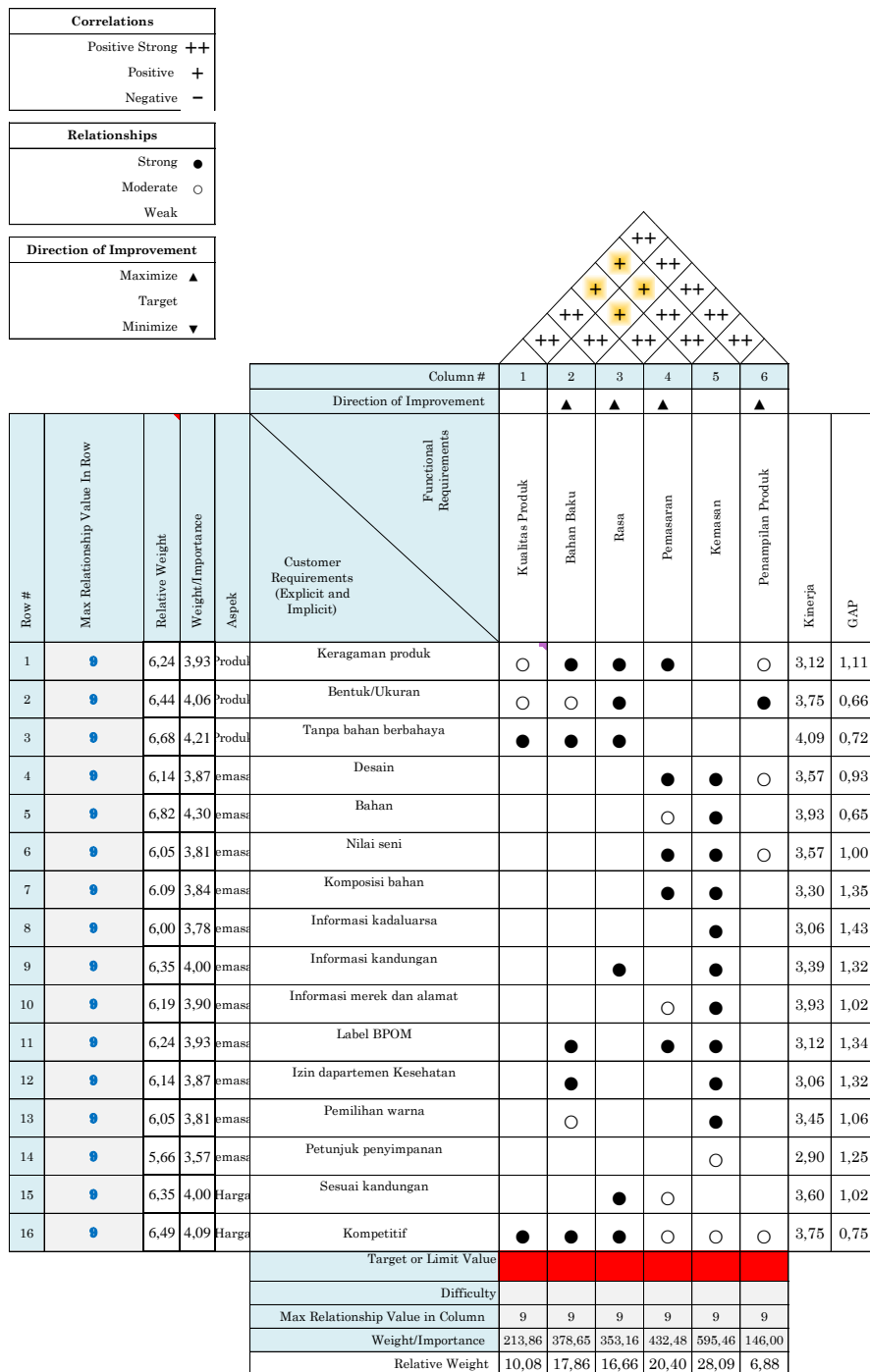
Tabel 10. Priority Technical Response

Quality Characteristics (a.k.a "Functional Requirements" or "Hows")	Product Appearance					
	Quality	Raw Mat	Flavor	Promotior	Packagging	
Demanded Quality (a.k.a "Customer Requirements" or "Whats")						
Product diversity	18,7230	56,1690	56,1690	60,1713	0,00	18,7230
Shape/Size	19,3425	19,3425	58,0275	0,00	0,00	58,0275
No hazardous materials	60,1713	60,1713	60,1713	0,00	0,00	0,00
Design shows a quality product	0,00	0,00	0,00	55,3113	55,3113	18,4371
Quality packaging materials	0,00	0,00	0,00	20,4858	61,4574	6,8286
Packaging contains artistic value	0,00	0,00	0,00	54,4545	54,4545	18,1515
Packaging informs the composition of the ingredients	0,00	54,8829	0,00	54,8829	54,8829	0,00
Packaging informs expired information	0,00	0,00	6,0028	0,00	54,0252	0,00
Packaging informs the benefits of the content	0,00	0,00	57,1698	0,00	57,1698	0,00
The packaging provides brand and address information	0,00	0,00	0,00	18,5802	55,7406	0,00
The packaging informs the BPOM label	0,00	56,1690	0,00	56,5983	56,1690	0,00
Packaging inform Health department clearance	0,00	55,3113	0,00	0,00	55,3113	0,00
Selection of colors in the package	0,00	18,1515	0,00	18,1515	54,4545	0,00
Packaging includes instructions for storage	0,00	0,00	0,00	0,00	17,0079	0,00
Price according to content and benefits	57,1698	0,00	57,1698	19,0566	0,00	6,3522
Competitive price with other brands	58,4559	58,4559	58,4559	19,4853	19,4853	19,4853
Total	213,8625	378,6534	353,1661	432,4890	595,4697	146,0052
Relatively	10,0895	17,8639	16,6615	20,4038	28,0928	6,8881

9. Relations Between Technical Responses

Based on the nature and level of the relationship, four types of relations are classified between technical responses, namely a strong positive relationship with the \oplus symbol, a positive relationship with the \oplus symbol, a

negativerelationship with the \ominus symbol, and a strong negative relationship with the \blacktriangledown symbol. The image below shows the relationship between technical responses in the Quality Function Deployment building, as well as uniting all other calculations in one final QFD image.



Picture 1. Quality Function Deployment Yale Bodycare

10. Performance and Interest Gaps

The importance of Gap information is equal to that of the preceding technical answer score; the difference between the two technical replies can be determined by the company's head of department, whilst the actuality of the Gap can be

determined by the capacity of the organization to meet the requirements. A significant gap demonstrates that it continues to fall short of customer expectations. The table below is presented starting with the worst.

Table 11. Performance and Interest Gaps

ConsumenRequairment	Interest	Performance	Gap	Gap(%)
Product diversity	3,93	3,12	1,11	6,55
Shape/Size	4,06	3,75	0,66	3,89
No hazardous materials	4,21	4,09	0,72	4,25
Design shows a quality product	3,87	3,57	0,93	5,49
Quality packaging materials	4,30	3,93	0,65	3,83
Packaging contains artistic value	3,81	3,57	1,00	5,90
Packaging informs the composition of the ingredients	3,84	3,30	1,35	7,97
Packaging informs expired information	3,78	3,06	1,43	8,44
Packaging informs the benefits of the content	4,00	3,39	1,32	7,79
The packaging provides brand and address information	3,90	3,93	1,02	6,02
The packaging informs the BPOM label	3,93	3,12	1,34	7,91
Packaging inform Health department clearance	3,87	3,06	1,32	7,79
Selection of colors in the package	3,81	3,45	1,06	6,26
Packaging includes instructions for storage	3,57	2,90	1,25	7,38
Price according to content and benefits	4,00	3,60	1,02	6,02
Competitive price with other brands	4,09	3,75	0,75	4,43

IV. RESULTS AND DISCUSSIONS

Analysis, design, development, implementation, and evaluation make up the ADDIE development methodology. An initial requirements analysis—which is the benchmark for customer satisfaction with Yale Bodycare products—is followed by the creation of the actual product development. The next step is to carry out the product development that was planned for the previous stage at this point, which entails completing the entire manufacturing process and producing the final product that consumers are expecting. The product was evaluated in a study with 33 participants as the last step. Yale Bodycare's goods were determined to be workable with a high proportion of 66.54%. According to the questionnaire answers provided by the informants, Yale Bodycare products were practical.

The amount of customer want for a characteristic is explained in the last line (Relative Weight) of the QFD findings above; a high score indicates a strong desire, while a low score does the opposite. According to customers, Yale Bodycare's ability to satisfy all of their needs is the most crucial

factor that can be accounted for sequentially. In order to achieve this objective, the following technical solutions might be made: packaging, marketing, raw materials, taste, product quality, and appearance. (Sinha et al., 2013)

The most comprehensive response on packaging illustrates how important packaging is in satisfying customer demands. This is evident from Yale Bodycare's extensive list of package features, demonstrating how effective packaging design can significantly increase customer happiness. Many of the features that customers anticipate are then handled by the marketing technical response and other factors listed above. such that achieving it can significantly contribute. The technical response score's strength of association with the characteristic is another issue that requires consideration. There are numerous, solid connections between qualities and packaging, marketing, raw materials, and other factors. Setting priorities is crucial.

Along with the technical answer score, the QFD Gap score is also displayed. This graph shows how well the attribute performance matches customer expectations or interests. A high Gap score

denotes performance that falls well short of customer expectations. Both the answer score and the function of the Gap information are critical. The packaging attribute with outdated information has the largest discrepancy, with a score of only 8.44%. This information explains why the packaging didn't measure up to customers' expectations. In other words, the package with the shortest expiration date is comparatively low in comparison to other features. With a margin of 3.83%, excellent packing material is the best, indicating that consumers can accept it more readily than other attributes. Buyers typically have higher expectations than what really occurred, thus the gap is ideal. Since all of the attribute criteria in the table above have a score of greater than 3, it is also required to interpret the performance score in a way that makes it more objective. Although there is still a gap, the response on the scale of 1 to 5 is more than a moderate scale of 3, indicating that the feature has been evaluated. The buyer did a wonderful job.

V. CONCLUSION AND RECOMMENDATIONS

Conclusions that may be made based on the study findings mentioned in the preceding chapter include :

- a. The ADDIE technique testing with 33 respondents' findings revealed that Yale Bodycare products were viable with a high proportion of 66.54%. According to the questionnaire answers provided by the informants, Yale Bodycare products were practical.
- b. The degree of customer expectations has not been fulfilled by Yale Bodycare's products. This is evident from the discrepancy between performance and the still-high customer interests and demands. The main features that need to be created or enhanced in order to satisfy customer expectations, wants, and requirements may be identified via the gap analysis. A significant gap demonstrates that it continues to fall short of customer expectations. Sequentially from the worst gap, namely product diversity, color choice in packaging, brand and address, packaging informing expired information, packaging informing BPOM labels, packaging informing content benefits, packaging informing health department permits, packaging informing storage instructions, Price in accordance with the product's advantages and substance, artistic value in the packaging, a well-thought-out design, prices that are comparable with those of other brands, absence of hazardous materials, shape/size, and, last but not least, high-quality packaging materials.
- c. The QFD findings provide an explanation of the product attributes that may be prioritized for

marketing and development in accordance with consumer wants and desires; the greatest scores correspond to high demands, while the lowest scores do the opposite. Sequentially, packaging, packaging, marketing, raw materials, taste, product quality, and product appearance are the six technical replies' top work goals. Priority is given to those who significantly contribute to satisfying customer demands.

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