

Assessing the Influence of Brand Equity Dimensions and Product Quality on Consumer Loyalty: Study of Lifebuoy Soap in DKI Jakarta

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Abstract

This study examines the influence of brand awareness, brand image, and product quality on customer loyalty toward Lifebuoy soap in the DKI Jakarta area, considering the increasingly competitive personal care market that requires companies to build strong and sustainable relationships with consumers. A quantitative research approach was employed by distributing structured questionnaires to 96 respondents who were selected using customized sampling techniques to ensure relevance to the research objectives. The data collected from the respondents were processed and analyzed using multiple linear regression analysis to identify both partial and simultaneous effects of the independent variables on customer loyalty. The findings reveal that brand awareness, brand image, and product quality each have a positive and significant effect on customer loyalty toward Lifebuoy soap, indicating that consumers are more likely to remain loyal when they are familiar with the brand, perceive it positively, and believe that the product delivers consistent quality. Furthermore, the results demonstrate that when these three variables are considered together, they exert a strong combined influence on customer loyalty, highlighting the importance of an integrated branding and quality strategy. Among the variables analyzed, brand image emerged as the most dominant factor affecting customer loyalty, suggesting that consumers' overall perceptions, associations, and emotional connections with the brand play a crucial role in sustaining long-term loyalty. These findings imply that while brand awareness is important in attracting consumers, it is not sufficient on its own to maintain loyalty unless it is supported by a strong brand image and high product quality. Therefore, companies should prioritize strengthening brand image and maintaining product quality to enhance customer loyalty in the long term.

KEYWORDS

brand awareness, brand image, product quality, consumer loyalty.

Introduction

The SARS-CoV-2 virus resulting in the pandemic of COVID-19 has entered into history as one of the most severe global health crises to occur within a modern time frame. Various types of symptoms are associated with this disease, including mild, moderate, severe, and sometimes fatal symptoms; however, older adults and persons who have current medical illnesses are at very high risk for developing serious complications from this virus (World Health Organization, 2023). To mitigate the impact of this virus, the WHO encourages the use of clean and healthy lifestyle practices, such as keeping physical distance, using masks, and frequently washing hands or using hand sanitizers (World Health Organization, 2023). The heightened awareness of hygiene and personal care products, an effect of the COVID-19 has produced an overwhelming increase in the demand for personal hygiene products.

After COVID-19, people have become significantly more aware of the importance of hygiene and personal care products than ever before. Soap is now seen as more than just a simple cleaning product and has come to represent a healthier way of living and

improved quality of life (Dwipayanti et al., 2021).

According to research by Dwipayanti et al. (2021), a significant increase in handwashing frequency took place among the majority of Indonesians (87% of females and 73% of males) throughout the COVID-19 pandemic, with many individuals washing their hands more than eight times daily. The increase in handwashing will likely continue even after the pandemic has passed.

The increase in handwashing represents a new level of public consciousness about the importance of cleanliness to the prevention of disease transmission. As a result, the increased demand for personal hygiene and personal care items such as soap will continue.

Based on [Table 1](#) and [Figure 1](#), which shows Lifebuoy Index data from 2021 to 2025, Lifebuoy soap's market share has fluctuated. In 2021, it stood at 34.7%; in 2022, 32.7%; in 2023, 30.2%; and in 2024, 27.1% (Top Brand Award, 2025). However, in 2025, it increased by 30.3%. This fluctuation demonstrates the dynamics of consumer loyalty: high brand awareness does not always translate into loyalty. Several factors contributed to this decline, ranging from the emerging perception that antiseptic soap feels "harsh on the skin" to increased competition from products such as Dettol and Biore, which emphasize a gentler, more natural image (Compas, 2023). Furthermore, in 2024, Unilever, the manufacturer of Lifebuoy, also faced a boycott in Indonesia, which could affect public perception and consumer purchasing interest (Reuters, 2025).

This phenomenon suggests a change in consumer preferences or the influence of competitors' marketing strategies. Although Lifebuoy has strong brand awareness, its image, quality, and consumer loyalty may experience a decline, particularly in the context of increasingly intense market competition (Schiffman & Wisenblit, 2019).

[Figure 2](#) shows fluctuations in Lifebuoy's market share over the past few years, accompanied by a significant decline in 2024, indicating a shift in consumer preferences or the impact of competitors' marketing strategies, as shown by data from the Top Brand Award (2025).

The [Top Brand Index shows that as of 2024](#) and into the early months of 2025, Lifebuoy has continued its top position in the bath soap market with a [Top Brand Index score increasing from 27.1% to 30.3%](#) over the same time frame, and an increase in market share over Biore, Dettol, and Lux ([Top Brand Award, 2025](#)) (Top Brand Award, 2025) has helped Lifebuoy be among the top-of-mind brands for most consumers in [Table 2](#). This high level of brand awareness is likely to be attributed to Lifebuoy's established history of providing high-quality products. However, it must be noted that having strong brand awareness does not guarantee a high level of customer loyalty for a brand. Other factors, such as the brand image of a brand and brand quality, are also factors that affect customer loyalty towards a marketing entity (Bernarto et al., 2020).

The results of previous research are mixed. Some studies have indicated that brand image is of great importance (Munandar, 2019), while other studies indicate there is little to no impact (Lestari & Yanah, 2023). There is still no question that product quality will continue to be the most important factor when determining whether or not a consumer will remain loyal to a brand. This is especially true for the brands that provide the expected benefits consistently to consumers (Nadjwa et al., 2024). Lifebuoy has a very strong positive brand image due to their antiseptic formulation, a huge number of products that are considered family soaps, and a long-standing reputation as a trusted and dependable source of product (Top Brand Award, 2025).

According to the [Compas \(2023\)](#), Lifebuoy has a commanding lead in the bath soap market with estimated sales of 24,700 units sold, accounting for a 13.36% market

share and achieving revenue of Rp 1.5 billion over a two-week period. This success is a testament to Lifebuoy's commitment to offering its consumers the best available products that are effective and reliable in the quest for healthy skin.

Lifebuoy is part of the Unilever brand family and continues to be one of the leading brands in the body wash market. According to the [Compas \(2023\)](#) report, Lifebuoy's best-selling product, the Lemon Fresh Liquid Soap Refill (825ml x 4 pack), demonstrates the success of the company's bundled refill marketing strategy (Rosdiana & Indrawati, 2025).

Despite strong brand awareness, Lifebuoy has experienced a decline in consumer loyalty amid increasingly intense market competition. Although the brand remains widely recognized and trusted, the reduction in its market share suggests that consumer loyalty is influenced by more than brand awareness alone, including perceptions of product quality, marketing efforts, and shifting consumer preferences.

Therefore, this study seeks to examine the key factors that



Figure 1. Lifebuoy Top Brand Index graphics

Table 1. Lifebuoy Annual Top Brand Index percentage

No.	Year	Percentage
1	2021	34,70%
2	2022	32,70%
3	2023	30,20%
4	2024	27,10%
5	2025	30,30%

Figure 2. Comparison of Lifebuoy Graphics with Competitors

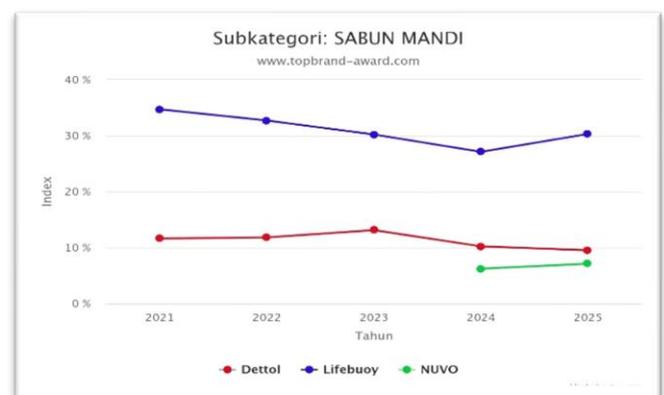


Table 2. Percentage Chart of Lifebuoy Soap with Competitors

No	Brand	2021	2022	2023	2024	2025
1	Dettol	11,60%	11,80%	13,10%	10,20%	9,50%
2	Lifebuoy	34,70%	32,70%	30,20%	27,10%	30,30%
3	Nuvo	•	•	•	6,20%	7,10%

contribute to strengthening consumer loyalty toward Lifebuoy, particularly in the post-COVID-19 context marked by changes in consumer behavior, increasing market competition, and recent boycott issues. Prior studies have reported inconsistent results regarding the influence of brand awareness, brand image, and product quality on consumer loyalty, highlighting an existing empirical gap. In response to this gap, the present study investigates the effects of these variables on Lifebuoy consumer loyalty, both individually and collectively, within the highly competitive market environment of DKI Jakarta.

Methods

This research used a quantitative approach, gathering numerical data and analyzing it statistically. This method suits surveys that examine variable relationships and test hypotheses, as it allows objective measurement and generalization (Sihotang, 2023).

The researcher applied a nonprobability sampling technique, specifically purposive sampling. Participants were chosen according to particular criteria that were consistent with and relevant to the aims of the study:

1. Consumers aged 17 years and over.
2. Residing in Jakarta.
3. Having purchased and used Lifebuoy brand soap at least twice.

The respondents in this study were selected using a sampling technique based on predetermined criteria, in accordance with the research objectives (Chee Kueng, 2020). This study focuses on analyzing the influence of brand awareness, image, and quality on consumer loyalty toward Lifebuoy soap in DKI Jakarta. The operational definitions of the variables are described as follows:

a. Independent Variable (X)

Independent variables are variables that generally work as predictors, and they are likely to play a role in altering the dependent variable (Sugiyono, 2020). In the study, the independent variables are Brand Awareness (X1), Brand Image (X2), and Product Quality (X3).

b. Dependent Variable (Y)

The dependent variable is the variable affected by the independent variables (Sugiyono, 2020:69). In this research, Consumer Loyalty was designated as the dependent variable.

Data Collection Sources

The data for this study are classified as primary data and secondary data. The primary data were collected by distributing questionnaires to eligible subjects, whereas the secondary data were obtained from relevant literature sources that deal with marketing management concepts and consumer loyalty for Lifebuoy products at DKI Jakarta (Siyoto & Sodik, 2015).

Population

In this study, the population consists of consumers in DKI Jakarta who had made at least twice purchases of Lifebuoy products during 2024–2025. However, the exact number of consumers who meet these criteria is not available in public data, so the population is considered unknown or very large (infinite population).

Sample

This research applied a non-probability sampling technique, specifically purposive sampling, in which respondents were selected based on predefined characteristics relevant to the objectives of the study (Chee Kueng, 2020). Furthermore, the sample size was calculated

using the Lemeshow formula, which is commonly employed in studies involving large or unknown populations (Lemeshow et al., 1990) (Lemeshow et al., 1990). The formula used to determine the required sample size is presented as follows:

$$n = \frac{Z_{1-\alpha/2}^2 p(1-p)}{d^2}$$

Where:

$Z_{1-\alpha/2}$: the Z standard value for a 95% confidence level (used 1.96).

p : the proportion of expected events; Since it is not yet known, 0.50 is used (conservative to produce the maximum sample size).

1 - p : proportional complement (if p = 0.50, then 1-p = 0.50)

d : The margin of error in this study was set at 10%

n : minimum sample size required

So,

$$n = \frac{(1,96)^2 \times 0,50 \times 0,50}{(0,10)^2} = \frac{3,8416 \times 0,25}{0,01} = 96,04$$

A margin of error of 10% was chosen based on a non-probability sampling research technique with purposive sampling and aimed to obtain a general picture of respondents who fit the research criteria. Given that the population proportion is unknown (p = 0.50) and with a 95% confidence level, the use of a 10% margin of error can be used in social survey research and is able to produce a minimum sample size of 96 respondents based on the Lemeshow formula. Thus, the minimum number of samples used in this study is 96 respondents.

Data Collection Techniques

Primary data was collected directly from respondents through questionnaires that were systematically compiled according to the research variables in the period from October to December in the year 2025 and were conducted and observed online by the researcher. The questionnaire used was in the form of questions with a Likert scale aimed at respondents with predetermined criteria and distributed online via the WhatsApp platform and social media using Google Forms with a limit of 1 response for each respondent. Respondent screening was conducted by selecting individuals who acted as consumers of Lifebuoy brand soap who resided in DKI Jakarta, were 17 years old or older, and had purchased and used Lifebuoy brand soap at least twice. Individuals who did not meet these criteria were automatically excluded from the final dataset. This procedure was implemented to ensure that the analysis reflected actual consumer perceptions in the targeted geographic area.

In addition to primary data, secondary data was obtained by the author from relevant official sources, including:

- The Top Brand Award (2025) report in the bath soap category, to illustrate Lifebuoy's position in the market as well as fluctuations in the level of brand awareness, brand image, product quality, and consumer loyalty.
- Data from the Central Statistics Agency (Central Statistics Agency of DKI Jakarta Province, 2025) (Central Statistics Agency of DKI Jakarta Province, 2025) provides information on DKI Jakarta's population, offering an overview of the research area.
- Scientific literature, such as books, journals, and prior publications, provides the theoretical foundation for the research.

Respondents in this study were recruited through voluntary online participation, which may pose a risk of self-selection bias. Individuals with experiences aligned with the criteria tend to have stronger involvement with a specific interest in the product under study and may be more likely to participate compared to the general population.

Data Analysis Techniques

1. **Research Instrument Analysis:** In this study, the validity and reliability of the questionnaire have been ascertained. The validity of the study has been measured with the item-total correlation value and the r-table value for a significant level of 5%. For determining the reliability of the study, Cronbach Alpha has been used, where a value greater than 0.60 is considered reliable for the study as (Krisnawati et al., 2024; Rosita et al., 2021).
2. **Research Data Analysis:** Quantitative data analysis in this study was conducted using statistical software, specifically SPSS version 25. Questionnaire responses were transformed into numerical form and subsequently analyzed to assess the relationships between the independent variables brand awareness, brand image, and product quality and the dependent variable, consumer loyalty.
3. **Data Normality Test:** The normality assessment was required to find out if the values fitted a normal distribution. The Kolmogorov-Smirnov test was used, where if the significance value exceeded 0.05, then normality was assumed (Abd Kadir et al., 2022).
4. **Multiple linear regression analysis** was used to analyze the partial and simultaneous effects of brand awareness, brand image, and product quality on consumer loyalty (Ghozali, 2021). The regression model is formulated as follows:

$$\text{Consumer Loyalty (CL)} = \alpha + \beta_1\text{BA} + \beta_2\text{BI} + \beta_3\text{PQ} + e$$

Where:

Y	: Consumer Loyalty
X1	: Brand Awareness
X2	: Brand Image
X3	: Product Quality
a	: Constant
b1, b2, b3	: Regression Coefficient
e	: Error

Hypothesis Analysis and Test Design

1. **Descriptive Analysis:** Descriptive analysis was employed in summarizing the characteristics of data collected by each item in the questionnaire. The results are presented as frequencies, percentages, mean values, and standard deviations. In this way, the researcher can obtain information about the pattern of data distribution and a broad description of sample characteristics.
2. **Before regression analysis, a classical assumption test was conducted.** The normality of the data was tested using the Kolmogorov-Smirnov method:
 - **Normality Test:** using the Kolmogorov-Smirnov method, where data considered normally distributed if the p-value exceeded 0.05 (Sari et al., 2024).
 - **Multicollinearity test:** It is utilized to find the linkage of independent variables. The regression equation was said to have no multicollinearity problems if its Tolerance was above 0.10 and Variance Inflation Factor was below 10.00, as stated by (Ghozali, 2021).
 - **Heteroscedasticity Test:** Conducted to determine whether the residual variance was constant. The model was regarded as free from heteroscedasticity if the Glejser test produced a p-value greater than 0.05 or if the scatterplot showed a random pattern (Ghozali, 2021).
3. **Hypothesis Test:** Hypothesis testing was performed to evaluate whether brand awareness, image, and product quality had a significant effect on consumer loyalty (Akbar et al., 2024). One of the tests applied was the t-test, which measures the partial effect of each variable on the dependent variable, formulated as:

- The t-test: Used to test the influence of each independent variable on the dependent variable partially, with the formula:

$$t = \frac{b_i}{SE(b_i)}$$

With:

b_i = regression coefficient of independent variable i

$SE(b_i)$ = standard error coefficient regression

The decision is as follows:

- a. $H_0: \beta_i = 0 \rightarrow$ there is no significant influence of X_i on Y .
- b. $H_1: \beta_i \neq 0 \rightarrow$ there is a significant influence of X_i on Y .
- c. H_0 is rejected if the value sig. < 0.05 or $|t \text{ calculate}| > t$ table

- F-test: to test the joint or simultaneous influence of all independent variables with dependent variables:

$$F = \frac{(R^2/k)}{((1-R^2)/(n-k-1))}$$

With:

R^2 = coefficient of determination

k = number of independent variables

n = number of samples

Verdict:

1. $H_0: \beta_1 = \beta_2 = \dots = \beta_k = 0 \rightarrow$ no simultaneous influence of X_1, X_2, X_3 on Y .
2. $H_1: \text{At least one } \beta_i \neq 0 \rightarrow$ there is a simultaneous influence of X_1, X_2, X_3 on Y .
3. H_0 is rejected if the value sig. < 0.05 or $F \text{ calculate} > F$ table.

- This measure is employed to assess the extent to which variations in the dependent variable are accounted for by the independent variables included in the model. It indicates the explanatory power of the regression model by showing how much of the outcome can be statistically attributed to the predictors, as expressed in the following formula:

$$R^2 = \frac{SSR}{SST}$$

Verdict:

1. The value $R^2 = 0 \rightarrow$ independent variables does not explain the dependent variable at all.
2. The value of R^2 is closer to 1 \rightarrow the greater the proportion of the variance Y described by X .

Based on the research framework, the hypotheses proposed are as follows:

- H_1 : Brand Awareness (X_1) has significant effect on Consumer Loyalty (Y).
- H_2 : Brand Image (X_2) has significant effect on Consumer Loyalty (Y).
- H_3 : Product Quality (X_3) has significant effect on Consumer Loyalty (Y).
- H_4 : Brand Awareness (X_1), Brand Image (X_2), and Product Quality (X_3) simultaneously have a significant effect on Consumer Loyalty (Y).

The findings from the hypothesis testing are intended to determine whether brand awareness, image, and quality significantly affect the level of consumer loyalty toward Lifebuoy products in the DKI Jakarta area (Lu & Wu, 2025).

Result and Discussion

In this section, we will discuss the results of research and analysis of the thesis entitled "The Influence of Brand Awareness, Image, and Quality on Consumer Loyalty of Lifebuoy Soap in DKI Jakarta. The X variables in this study are Brand

Awareness (X1), Brand Image (X2), and Product Quality (X3). While the Y variable in this study is Consumer Loyalty. Categories by Respondent's Gender, Domicile, Age, Purchase Frequency, and Occupation

It is known that out of a total of 96 respondents who are consumers of Lifebuoy brand soap, the majority of respondents are based on categories:

1. Gender: The majority of participants (71 people) who completed the survey were female (74%), while only 26% were male. This large number of female participants suggests the primary influence for purchasing and using Lifebuoy soap products is likely from female consumers. One reason for this is women tend to have greater concern for cleanliness and their family's health than men and, as such, are often more selective when it comes to household product purchases. This means that most respondents' perceptions of the brand awareness, brand image, and product quality of Lifebuoy will be based on the opinions of female consumers, and this may contribute to the level of consumer loyalty seen within this research project.
2. Domicile: The majority of respondents are domiciled in East Jakarta, with 48 people, or 50%. Furthermore, 30 respondents live in South Jakarta, or 31.3%, are followed. Meanwhile, respondents who live in West Jakarta, Central Jakarta, and North Jakarta have a relatively smaller percentage. The dominance of respondents living in East and South Jakarta indicates that these regions have a higher level of use or affordability of Lifebuoy products than other regions. This difference in respondents' domicile has the potential to affect perceptions brand in this study.
3. Age: The majority of respondents were aged 17–25, totaling 58 (60.4%). The dominance of this age group indicates that Lifebuoy consumers in this study are predominantly late teens to early adults. These age groups generally have higher levels of hygiene and health awareness and tend to be more responsive to product information, promotions, and brand image. Furthermore, respondents aged 26-35 accounted for 21 people (21.9%), the second-largest age group. This group is generally in the productive age, with a relatively high need for hygiene products for both personal and family use. Meanwhile, respondents aged 36–45 years, 46–55 years, and 55+ years had lower proportions, indicating lower use of Lifebuoy products in these age groups. Overall, the age composition of these respondents indicates that perceptions of brand awareness, brand image, and the quality of Lifebuoy's products are more strongly held by younger respondents. This condition has the potential to affect the level of consumer loyalty, considering that young age groups tend to be more open to brand experiences and more dynamic in determining product choices.
4. Purchase Frequency: Most respondents (43, or 44.8% of the total respondents) bought Lifebuoy soap 1–2 times during the usage period. This shows that Lifebuoy is a product consumers use quite often, even though its purchase frequency is still in the low-to-medium range. This condition may indicate that Lifebuoy is one of the hygiene products consumers regularly use, but it is not yet the only brand they use exclusively.

Furthermore, respondents who purchased 3-4 times accounted for 22 people (22.9%). This group describes consumers who make purchases more consistently than the previous group, which shows a tendency to use Lifebuoy products repeatedly.

Meanwhile, 31 respondents (32.3%) reported purchasing more than four times, representing a significant proportion. This suggests these consumers

have higher usage and stronger loyalty to Lifebuoy products.

Overall, the data indicate that while most respondents fall within the low to moderate purchase frequency category, a substantial segment of consumers demonstrates a high level of repeat purchasing. This pattern suggests that Lifebuoy has been able to establish strong loyalty among certain consumers, potentially driven by their perceptions of brand awareness, brand image, and product quality.

5. Occupation: The findings show that the largest proportion of respondents consists of private-sector employees, with 46 individuals accounting for 47.9 percent of the total sample. This dominance suggests that many Lifebuoy consumers included in the study belong to the productive age group and maintain a high level of daily activity. Such conditions imply that personal hygiene products play a crucial role in supporting routine activities, which in turn encourages consistent and regular usage.

The second-largest job category is students, with 29 respondents (30.2%). These findings are in line with the age characteristics of respondents who were previously dominated by young age groups. Student groups and students generally have a high level of social mobility and awareness of personal hygiene, so they tend to need soap products that are practical, easily accessible, and have a strong brand image.

Furthermore, respondents who work as housewives and entrepreneurs numbered 8 people (8.3%) and 7 people (7.3%), respectively. Both groups describe variation in respondents' work backgrounds, indicating that the use of Lifebuoy's products is not limited to a single type of work.

Respondents in other jobs, such as SOEs, doctors, fresh graduates, private teachers, civil servants, and voice actors, are few and do not significantly shape the study results.

Descriptive Analysis of Brand Awareness, Brand Image, Service Quality, and Consumer Loyalty

1. Brand Awareness (X1): The Brand Awareness variable (X1) has a minimum value of 27, a maximum value of 45, a mean of 36.6042, and a standard deviation of 4.45912. The average value indicates that consumer Brand Awareness of Lifebuoy soap products is in the good category. This condition indicates that most respondents are familiar with the Lifebuoy brand, as evidenced by its brand recognition, recall, and market presence.
2. Brand Image (X2): The minimum and maximum scores of the Brand Image variable X2 are 26 and 40, respectively, with a mean 35.9231 and a standard deviation 4.07148. A relatively high mean score reveals that, on the whole, favorable perceptions of the brand image of Lifebuoy exist among the surveyed. This suggests that Lifebuoy will be regarded as widely reputed, reliable, qualitatively good, and overall positive in the minds of consumers.
3. Service Quality (X3): The Service Quality (X3) variable shows a minimum score of 44 and maximum score of 80, with a mean value of 65.3646 and a standard deviation of 7.28534. The relatively high average score indicates that respondents generally assess the service quality associated with Lifebuoy soap products positively. This finding implies that consumers perceive aspects such as product accessibility, the availability of relevant information, and responsiveness to consumer needs as being satisfactory and in line with their expectations.
4. Consumer Loyalty (Y): The Consumer Loyalty variable (Y) has a minimum value of 22, a maximum of 53, a mean of 42.6923, and a standard deviation of 11.40456. The mean, which is closer to the upper end of the range, indicates that overall consumer loyalty to Lifebuoy soap products is relatively strong. This result demonstrates that consumers are not only aware of and use Lifebuoy

- products, but also consistently prefer them despite the presence of other soap brands on the market.

Validity Test

The validity test was performed to confirm the appropriateness of each item in the questionnaire to measure the variables of the research. In the study, item validity was evaluated through the use of the Pearson product moment correlation, which was identified through the corrected item total correlation received from the SPSS version 25 software. The value represents the items ability to predict the total variable without the item itself, which would give a more exact answer to the item’s ability to measure the variable.

Item is said to be valid if its calculated correlation coefficient is compared and found to be greater than the critical r-value for a specified significance level of $\alpha = 0.05$ (two-tailed). Items whose significance levels were below 0.05 were considered valid. Given a sample size of 96 respondents, the number of degrees of freedom was 94 ($n - 2$). The critical value for the specified significance and degrees of freedom is the value of ± 0.202 , meaning any questionnaire item with a value greater than this could be considered valid and useful for analysis.

The correlation coefficient for each item in Brand Awareness (X1), Brand Image (X2), Product Quality (X3), and Consumer Loyalty (Y) were higher than the critical value of 0.202. This is because a significance level of $\alpha = 0.05$ has been used in the test, giving a sample size of 96, hence a degrees of freedom of 94 ($df = n - 2$) for a two-tailed test.

This shows that all statement items are significantly related to the total value of their variable, thus confirming that each item is effective in measuring the proposed construct. This, therefore, means that all the statements used in the research instrument meet the criteria of validity and can therefore be used for data collection.

Reliability Test

The reliability test measures how consistently an instrument assesses a construct. An instrument is considered reliable if it provides consistent results under the same conditions.

This study tested reliability using Cronbach's Alpha in SPSS version 25. In social research, an instrument is reliable if Cronbach's Alpha exceeds 0.60. A value above 0.70 shows good reliability.

In [Table 3](#), the Cronbach's Alpha values for the variables of Brand Awareness, Image, Quality, and Consumer Loyalty were found to be 0.757, 0.789, 0.873, and 0.946, respectively. These values exceed the minimum acceptable standard of 0.60.

These outcomes indicate a strong internal consistency within each set of measurement items, conducted for each variable, and a strong relationship between them in terms of measuring a similar concept. Therefore, the research instrument used in this study is reliable and ready to gather the data.

Normality Test

The normality assessment in this study was conducted to evaluate whether the data for the independent and dependent variables follow a normal distribution. Using Kolmogorov–Smirnov, data considered to be normally when

the significance value is above 0.05. The outcomes of this test are presented in [Table 4](#).

According to the result shown in [Table 4](#), the Asymp. Sig. (2-tailed) is less than 0.05, with a value of 0.006. This indicates that the residuals on the regression model do not follow the same normal distribution, as indicated by the result obtained using the Kolmogorov-Smirnov test.

However, the sampling size employed in this study should be taken into consideration, which has a total of 96 participants. In cases involving relatively large sampling sizes, the Kolmogorov-Smirnov test has long been considered highly sensitive to even small deviations from normality concerning the normality test of data. In such cases, there may be a likelihood of detecting relatively small deviations from normality that are practically meaningless.

Hence, while the test accounts for the departure from normality, the distribution of the residuals can still be said to follow a normal distribution, although not perfectly. Therefore, the assumption of normality is judged to be appropriately met, and the multiple linear regression analysis is valid for this research.

Multicollinearity Test

The multicollinearity test was used in the study to assess whether there was no correlation between dependent and independent variables in multiple regression models. The data indicate there is no indication of multicollinearity if the VIF is above 10 and the tolerance is lower than 0.1.

Table 3. Results of the Reliability Test of the Four Variables

Variable	Cronbach's Alpha Test Score	Limitations	Verdict
Brand Awareness	0,757	0,60	Realistic
Brand Image	0,789		Reliable
Product Quality	0,873		Reliable
Consumer Loyalty	0,946		Reliable

Source: Data Processing Results, 2025

Table 4. The Normality Test of the Fourth Variable

One-Sample Kolmogorov-Smirnov Test		
	N	Unstandardized Residual
Normal Parameters, b	Red	.0000000
	=Std. Deviation	6.25142051
Most Extreme Differences	Absolute	.110
	Positive	.059
	Negative	-.110
Test Statistic		.110
Asymp. Sig. (2-tailed)		.006c

Source: Data Processing Results, 2025

Table 5. Results of the Multicollinearity Test of the Four Variables

Models	Coefficient				
	Unstandardized Coefficients		tT	Sig.	Collinearity Statistics
	B	std. Error			
1 (Constant)	32.814	.219	.277	000	Tolerance IVID

Models	Coefficient			tT	Sig.	Collinearity Statistics	
	Unstandardized Coefficients		Standardized Coefficients			Tolerance	VID
	B	std. Error	Beta				
Brand_Awareness	457	204	.199	2.242	.027	.514	1.945
Brand_Image	.871	.249	.390	3.493	.001	.323	3.096
Kualitas_Produk	.402	.155	.285	2.587	.011	.332	3.013

a. Variable Dependent: Loyalitas_Konsumen

Source: Data Processing Results, 2025

Table 6. Results of the Heteroscedasticity Test of the Four Variables

Models		Coefficient			t	Sig.
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)	3.760	3.895		.965	.337
	Brand_Awareness	-.027	.128	-.030	-.211	.833
	Brand_Image	-.190	.156	-.221	-1.219	.226
	Kualitas_Produk	.134	.097	.246	1.373	.173

a. Dependent Variable: ABS_RES

Source: Data Processing Results, 2025

Table 7. Multiple Linear Regression

Models		Coefficient			t	Sig.
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)	32.814	6.219		5.277	.000
	Brand Awareness	.457	.204	.199	2.242	.027
	Brand Image	.871	.249	.390	3.493	.001
	Product Quality	.402	.155	.285	2.587	.011

a. Dependent Variable: Y

Source: Data processing results, 2025

Table 5 displays the findings from the multicollinearity analysis. The Brand Awareness variable (X1) shows a Tolerance value of 0.514 and a VIF of 1.945. For Brand Image (X2), the Tolerance is 0.323 with a VIF of 3.096, while Product Quality (X3) has a Tolerance of 0.332 and a VIF of 3.013. Since all Tolerance values are above 0.10 and VIF scores remain below 10, it can be concluded that the independent variables not exhibit multicollinearity.

Heteroscedasticity Test

The Testing heteroscedasticity in research is carried out with the purpose of knowing if the variance of the residuals remains constant or if the signals of irregularity occur. In this analysis, the Glejser Test was performed, which interprets that when the significance value is greater than 0.05, the data will be free from heteroscedasticity. The test result in Table 6 summarize the results of this analysis.

In the specific approach of Glejser, it was a case of regressing the absolute values of residuals, or ABS_RES, against the independent variables, which are X1 for Brand Awareness, X2 for Brand Image, and X3 for Product Quality. Based on the criteria, if the significance level for each independent variable is greater than 0.05, one could conclude that no heteroscedasticity exists in the model.

Based The findings from the heteroscedasticity analysis in Table 10 indicate that the significance levels for Brand Awareness (X1), Brand Image (X2), and Product Quality (X3) are 0.833, 0.226, and 0.173, respectively. Since all of these values exceed the 0.05 threshold, they are considered not statistically significant.

Based on these results, it can be inferred that the regression model used in this study does not suffer from

heteroscedasticity. Consequently, the model satisfies the assumption of constant variance in the residuals and is appropriate for further statistical analysis.

Multiple Linear Regression Test

This method was utilized to assess the effects of Brand Awareness (X1), Brand Image (X2), and Product Quality (X3) on Consumer Loyalty (Y). Multiple linear regression was considered appropriate because the study involves several predictors, each potentially contributing simultaneously to changes in the outcome variable.

The resulting regression model from the analysis can be expressed as follows:

$$\text{Consumer Loyalty} = A + \text{Brand Awareness} + \text{Brand Image} + \text{Product Quality}$$

So, the results of the calculation are in Table 7 as follows.

Interpretation:

$$\text{Konstanta } (\alpha) = 32,814$$

$$\text{Brand Awareness } (\beta_1) = 0,457$$

$$\text{Brand Image } (\beta_2) = 0,871$$

$$\text{Product Quality } (\beta_3) = 0,402$$

$$CL = 32,814 + 0,457\beta_1 + 0,871\beta_2 + 0,402\beta_3$$

The regression equation shows that the constant is positive, representing a base level of Consumer Loyalty that exists even when Brand Awareness, Brand Image, and Product Quality are all zero. This base value means that, according to the model, Consumer Loyalty would not be entirely absent without these three factors, suggesting the presence of other influences outside the research model that contribute to Consumer Loyalty.

The Brand Awareness regression coefficient (X1) of 0.457 indicates that each one-unit increase in Brand Awareness raises

Table 8. Test F

ANOVA ^a						
Models	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	6293.782	3	2097.927	51.987	.000b
	Residual	3712.625	92	40.355		
	Total	10006.406	95			

a. Dependent Variable: Y

b. Predictors: (Constant), X3, X1, X2

Source: Data Processing Results, 2025

Table 9. T Test

Models	Coefficient				t	Sig.
	Unstandardized Coefficients		Standardized Coefficients			
	B	Std. Error	Beta			
1	(Constant)	32.814	6.219		5.277	.000
	Brand Awareness	.457	.204	.199	2.242	.027
	Brand Image	.871	.249	.390	3.493	.001
	Product Quality	.402	.155	.285	2.587	.011

a. Dependent Variable: Y

Source: Data Processing Results, 2025

Table 10. Coefficient of Determination

Model Summary				
Models	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.793a	.629	.617	6.35253

a. Predictors: (Constant), X3, X1, X2

Source: Data Processing Results, 2025

Consumer Loyalty by 0.457, holding other variables constant.

From the data provided, it is evident that the regression coefficient for Brand Image (X2) is 0.871. Indeed, this variable has a strong influence on Consumer Loyalty. This discussion emphasizes that where consumers perceive a strong and favorable brand image, it greatly influences consumers to be loyal to products like Lifebuoy.

Product Quality (X3) has a value of 0.402, showing that it too helps to promote an increase in Consumer Loyalty. This implies that the better the qualities of products, the greater is the commitment of consumers.

It can be concluded that all regression coefficients are positive, so it can be said that Brand Awareness, Brand Image, and Product Quality all positively affect Consumer Loyalty (Saddam et al., 2025).

Hypothesis Test Results

This study analyzed the influence of Brand Awareness (X1), Brand Image (X2), and Product Quality (X3) on Consumer Loyalty through hypothesis testing. Multiple linear regression is used to test the relationship between independent variables and dependent variables. Testing is divided into two, namely: simultaneous testing using the F test and individual testing using the t test. The F test function shows the effect of all independent variables collectively against Consumer Loyalty, while the t test function shows the effect of each variable against Consumer Loyalty. The results of this analysis can be seen in the following table, which will be further elaborated on in the next chapter.

The F test will denote whether there is a significant relationship between the three predictors and the dependent variable. Referring to the decision criteria, from the table if the computed F is greater than the critical F and the level of significance is less than 0.05, the null hypothesis is nullified. The results of the F test are displayed in [Table 8](#).

From [Table 8](#), the results of ANOVA give an F statistic of 51.987 and a Sig. of 0.000. The significance value is lower than 0.05, so the model has a good statistical significance.

The high F value indicates that Brand Awareness, Image, and Quality have an overall effect on Consumer Loyalty significantly higher than the variance introduced by those elements not covered by the model. This really outlines that the model bears strong explanatory power in the understanding of the determinants of consumer loyalty.

It follows, therefore, that taken statistically and conceptually, Consumer Loyalty towards Lifebuoy products is influenced collectively by the three independent variables (Putra et al., 2023). These results also reveal that the three variables taken together add more to one's understanding of loyalty than an individual evaluation of separate variables.

Meanwhile, the t-test was carried out to assess the effect of each independent variable on Consumer Loyalty individually, given the other variables in the model. This test will find out whether each factor contributes significantly to predict Consumer Loyalty. The results of the t-test in detail are presented in the following [Table 9](#).

The results of the t-test, shown in [Table 9](#), illustrate that the value of Brand Awareness (X1) is 2.242 with a significant level of 0.027. As this value is below 0.05, it can thus be stated that brand awareness affects consumer loyalty in a positive and significant manner.

In addition, the results of the Brand Image (X2) revealed that it has a t-value of 3.493 and a Sig. of 0.001, which suggests an important and significant positive influence on Consumer Loyalty. Among all the independent variables, the beta weight of the brand image is the highest.

In Product Quality (X3), the calculated t-value and significance level were 2.587 and 0.011, respectively. This shows that it is also significantly and positively contributing towards consumer loyalty.

Thus, in summary, the analysis indicates that Brand Awareness, Brand Image, and Product Quality all exert meaningful positive effects on Consumer Loyalty. This implies that each factor, on its own, plays an important role in strengthening consumers' commitment and preference toward Lifebuoy's products.

Coefficient of Determination Test (Adjusted R Square)

The R² or coefficient of determination is employed to judge the extent to which the set of independent variables explains the variation in the dependent variable in the regression

analysis. In simpler terms, the R^2 measures how much of the variation in the dependent variable is explainable by the predictors, with the remaining variation being accounted for by factors not included in the research. The interpretation of this result is shown in [Table 10](#).

The value of R as presented in Table 14 below (Model Summary) is 0.793; this shows a high correlation between Brand Awareness (X1), Brand Image (X2), Product Quality (X3), and Consumer Loyalty (Y). The higher the value of R approaches 1, the stronger the linear correlation between the independent and the dependent variable.

Coefficient of Determination, is 0.629, implying that 62.9% of the variation in the variable Consumer Loyalty can be explained by the joint effect of the variables Brand Awareness, Brand Image, and Product Quality on the regression equation.

On the other hand, the adjusted R^2 is 0.617. This adjusted R^2 takes into consideration both the number of variables and the size of the sample. This means that the adjusted R^2 is showing the percentage of variation explained by the model in the consumer loyalty, which is 61.7% after adjusting for the fit of the model with the addition of more variables. In multiple regression analysis, adjusted R^2 is preferred due to its accuracy.

It can be inferred that around 38.3% (100% – 61.7%) of the variation in consumer loyalty is driven by factors that have not been considered and included in this study. These factors could include things like promotions, pricing strategies, customer satisfaction, service quality, and other factors that have not been considered within this framework (Li et al., 2025).

Moreover, from the Model Summary, it can be deduced that the standard error of estimate is 6.35253. The number reflects the mean deviation of the estimated values obtained using the regression model and the actual values of consumer loyalty. The smaller the standard error of estimate, the more accurate the prediction model is.

Taking into account that the adjusted R^2 is relatively high, it could be stated that the regression model has a good ability to explain the consumer loyalty variation and could be used for conclusion-drawing in the research.

Conclusion

Based on the findings of this study examining how Brand Awareness, Brand Image, and Product Quality affect Consumer Loyalty toward Lifebuoy Soap in DKI Jakarta, it can be concluded that Brand Awareness has a significant effect on consumer loyalty, where consumers who can recognize and remember the brand well tend to repurchase and continue choosing Lifebuoy despite the presence of many alternatives. Furthermore, Brand Image plays an important role in shaping consumer loyalty, as positive perceptions of the brand's reputation, safety, and trust create emotional attachment, making it more difficult for consumers to switch to other brands. Product Quality also contributes to loyalty through a satisfactory user experience, where product benefits that align with consumer needs enhance trust and

encourage long-term usage. Among the variables studied, Brand Image is the most dominant factor influencing Lifebuoy's consumer loyalty, as it integrates both rational and emotional aspects in purchasing decisions. Overall, Lifebuoy's consumer loyalty is built on the synergy between Brand Awareness, Brand Image, and Product Quality, thus strengthening brand image and ensuring consistent product quality are essential strategies to maintain and enhance consumer loyalty. product quality consistency are the main strategy in maintaining consumer loyalty.

This study clearly demonstrates that increasing Brand Awareness, strengthening Brand Image, and maintaining Product Quality are essential strategies for building Lifebuoy Consumer Loyalty in DKI Jakarta.

Author contributions

Conceptualization, study design, data collection, data analysis and interpretation, and preparation of original draft of the manuscript were carried out by Savina Alfi Sahrin. Savina Alfi Sahrin was also responsible for the organization of the data and incorporating it into the discussion section of the paper. The research supervision and project administration were contributed to by Veronika Santi Paramita. The methodological guidance and critical comments on the research framework were contributed to by Veronika Santi Paramita. The critical review of the manuscript for substantial intellectual content was contributed to by Veronika Santi Paramita. The final version of the manuscript was approved by Veronika Santi Paramita. The authors have read the final version of the manuscript and have approved of its integrity.

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Conflict of interest

The authors declare that there are no conflicts of interest related to this study.

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