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The influence of product price and quality on customer loyalty with customer satisfaction as an intervening variable at PT. Brother Group, Medan

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ABSTRACT

The increasing number of competitors forces companies to be more competitive in their actions and decision-making in marketing their products or services. Customer loyalty becomes the target of every company so that the company can survive and grow in the market. Product quality and product prices certainly have an influence on customer satisfaction and customer loyalty. The purpose of this research is to determine the influence of product prices and product quality on customer satisfaction and customer loyalty, and whether there is a correlation between customer satisfaction and customer loyalty. In conducting the research, the researcher used primary data obtained from questionnaires distributed to the customers of PT. Brother Group, Medan. The number of respondents used was 92. This primary data was processed using the statistical software SPSS 22. Tests conducted included validity tests, reliability tests, classic assumption tests such as normality tests, multicollinearity tests, and heteroscedasticity tests, followed by path analysis then hypothesis tests which include partial tests, determination tests, and also Sobel tests. In this study, price was coded as (x1), product quality as (x2), customer satisfaction as (Z), and customer loyalty as (Y). The results obtained in this study show that x1 has a significant effect on Y with a t-count value of 2.615 > t-table 1.661. x2 does not have a significant effect on Y with a t-count value of 0.788 < t-table 1.661. x1 has a significant effect on Z, with a t-count value of 5.243 > t-table 1.661, x2 has a significant effect on Z with a t-count value of 3.314 > t-table 1.661, Z has a significant effect on Y with a t-count value of 6.222 > t-table which is 1.661, x1 has an effect on Y with Z as an intervening variable with a t-count value of 3.941633 > t-table value of 1.661, x2 has an effect on Y with Z as an intervening variable with a t-count value of 2.930647902 > t-table value of 1.661.

Keywords: Price, Product Quality, Customer Loyalty, Customer Satisfaction

1. INTRODUCTION

The surge in competitors within the business world has heightened the intensity of competition in the industry. The vast array of products and available substitutes benefits society by offering a wider range of choices to buyers. This increase in competitors compels companies to adopt a more competitive stance in their actions and decisions related to marketing their products or services. Every company is vying for the loyalty and trust of customers and potential clients. This stems from the undeniable fact that businesses need customers to sustain and grow in their industry (Juwaini et al., 2022).

Achieving customer loyalty is every company's objective, ensuring they remain viable and thrive in the market. Such loyalty emanates from customers' robust inclination to continue patronizing a company's products or services. It represents a long-term asset for any organization. Loyal customers emerge when they are satisfied with their experiences concerning the company's offerings. A satisfied customer is a testament to the company's ability to either meet or surpass their expectations. Several factors influence customer satisfaction with a company's products or services. Among these, product pricing and quality stand out. Price is a prominent factor affecting customer satisfaction levels. Naturally, customers desire affordable pricing – preferably lower than what competitors might offer. A competitive price tag often leads to heightened customer satisfaction.

Equally important is product quality, which significantly correlates with customer contentment (Sutia et al., 2020). Most customers gravitate towards quality products, which often outperform and last longer than their alternatives. This preference underscores product quality's role in determining continued patronage. PT. Brother Group, located at Jalan Pulau Palu no 36, Medan, is a firm specializing in plastic sales, offering products like polybag plastics, kilo plastics, and waste plastics. Having been in business for a decade, PT. Brother Group has consistently endeavored to bolster its sales and retain its customer base's appreciation. However, based on observations and interviews conducted by the author at

PT. Brother Group, there's been a noticeable decline in their customer count during 2022, as detailed in Table 1.

Table 1. Total Customers of PT. Brother Group, Medan 2022 - 2023

Period	Number of customers
January – March 2022	106
April -June 2022	98
July- September 2022	100
October – November 2022	92
December – February 2023	95
March – July 2023	92

Source PT. Brother Group, Medan, 2023

The decline in the customer base suggests that PT. Brother Group, Medan, might not have met the expectations of its customers. Naturally, PT. Brother Group, Medan, aspires to maintain a consistent base of loyal customers. Such loyal customers are those who consistently choose the company's products, especially when these products are for daily use. Regular monthly purchases of these products would typically be expected. The reduction in the number of customers for PT. Brother Group, Medan is believed to stem from factors like product pricing, product quality, and overall customer satisfaction.

Table 2. Product Price Comparison: PT. Brother Group, Medan vs. Other

Types of goods	PT. Brothers Group, Medan	PT. Surya Mitra Plastikindo, Medan	PT. Prosperous Jaya Award, Medan
Polybag plastic	IDR 21,000/kg	IDR 20,000/kg	IDR 20,000/kg
Kilo plastic	IDR 26,000/kg	IDR 25,500/kg	IDR 24,000/kg
Plastic trash	IDR 19,000/Kg	IDR 18,000/kg	IDR 17,500/kg

Source PT. Brother Group, Medan, 2023

Based on the data in Table 2, it's evident that the product prices at PT. Brother Group, Medan are relatively higher than those of similar products offered by competitors. Such premium pricing might deter customers or potential clients, making them more susceptible to switching to alternative brands that are more affordable. In interviews conducted by the author with a company manager named Mr. M. Maimunah regarding the product quality at PT. Brother Group, Medan, it was discovered that there are ongoing complaints about their products. A recurring grievance pertains to the thinness of the plastic, which can easily tear when subjected to heavier loads.

Customer satisfaction with PT. Brother Group, Medan is also perceived to be subpar, especially in terms of product delivery speed. The primary clientele of PT. Brother Group, Medan comprises stores that retail plastic products within the Medan city region. Discontent arises from comparisons with competitors, who generally deliver products faster than PT. Brother Group, Medan. For instance, if an order is placed in the morning with these other companies, customers typically receive their products by the afternoon of the same day. In contrast, a morning order with PT. Brother Group, Medan is likely to be delivered only by the next day.

2. LITERATURE REVIEW

Customer Loyalty

Customer loyalty can be understood from multiple perspectives. Sutanto (2019) defines it as the inclination of a customer to repeatedly purchase and utilize products or services from a particular company. Echoing this, Griffin (2019) describes customer loyalty as a behavior stemming from consumers' allegiance to a specific product or service brand. Anderson and Jacobsen (2019) interpret it as an outcome of a company's efforts in providing value, which then leads customers to repurchase and direct their loyalty towards the company. Hayes (2019) views it as an attitude displayed by companies towards their patrons, evident in the frequency of their repurchases and a potential increase in the volume of their future buys. Tjiptono (2019) simplifies it to the proclivity of customers to stay committed to a brand without being swayed easily by competitors. Consolidating these theories, customer loyalty manifests as a robust inclination among consumers towards a particular brand (Sahir et al., 2021), as reflected in their consistent buying behaviors and tendency to purchase in greater volumes.

Griffin (2019) underscores the benefits of customer loyalty, emphasizing: A reduction in marketing costs as retaining a customer is more cost-effective than acquiring a new one. Decreased transaction costs, including negotiations and order processing. A decline in customer turnover costs as there's lesser impetus to replace departing customers. Amplified positive word-of-mouth resulting from satisfied customers. Diminished failure-related expenditures, encompassing reductions in rework, warranty claims, and other related costs. The indicators of customer loyalty serve as a barometer to gauge the depth of a customer's commitment to a company's products and services. Hayes (2019) lists the following as key indicators: Number of referrals: An uptick in customer numbers, often due to effective word-of-mouth recommendations, is a strong indicator. Such endorsements, especially from trusted sources like family or friends, are considered potent marketing tools. b. Decision to buy again: This can be gauged by observing the count of repeat purchases by customers. c. The decision to purchase alternative products: This highlights customers' willingness to try other offerings from the same brand. d. The decision to upscale purchase volume: Observing whether customers enhance the quantity of their purchases during subsequent buying rounds can be revealing. e. Customer retention: A company's prowess in holding onto its existing clientele serves as a testament to its value delivery and ability to ensure customer satisfaction.

Price

Price holds significant importance in any transaction. According to Kotler (2019), price is the amount exchanged by consumers to obtain goods or services from a company. This concept is echoed by Tandjung (2020) who defines price as the mutually agreed amount between buyer and seller in a transaction. Olson (2019) elucidates it further by emphasizing that price represents what the consumer offers to a seller in order to benefit from the acquired product or service. Meanwhile, Susanto (2020) posits that price is determined by consumers after several considerations and is reciprocated with products or services from a business. Tjiptono (2019) offers a

more broadened view, explaining price as a monetary unit exchanged to gain ownership or use of a product or service. Collating these definitions, it's evident that price is a financial commitment made by consumers to benefit from and acquire rights to goods or services.

Factors that play a crucial role in determining prices include the state of the economy, especially in the context of currency exchange rates and imported goods. High demand for a product can inflate its price. The elasticity of demand affects prices too, with rising prices potentially decreasing sales volume and vice versa. Intense competition might necessitate competitive pricing. Costs, especially production costs, significantly influence pricing. The objectives or missions of a company can also be pivotal, whether it's to maximize profit, sales volume, market share, or return on investment. Government intervention, such as price ceilings or floors, can also impact pricing decisions.

The goals behind pricing strategies are multifaceted. As per Saladin (2019), companies set prices to ensure their sustainability and growth in the market, maximize short-term profits, achieve the best sales outcomes, effectively penetrate the market, and manage demand (Fahlevi, 2021). Setting the right price can thus be a determining factor for a company's success or failure.

Kotler (2019) suggests key indicators to evaluate the efficacy of pricing: price affordability, which reflects how accessible the product is to consumers; the correlation between price and product quality; alignment of price with the benefits offered; and the competitiveness of the price in comparison to similar products. This underlines that while price is a monetary figure, its implications and perceptions can be vast and varied, influencing both the seller's strategy and the buyer's decisions.

Product Quality

Product quality is intrinsic to the value and performance a product delivers to its users. At its core, product quality is the manifestation of a product's performance when utilized by consumers. It is crafted by businesses to ensure the aspirations and needs of consumers are met, if not exceeded. Several experts offer their perspectives on this crucial concept. Nasution (2019) posits that product quality pertains to the capability of a product to align with or surpass consumers' expectations. Tiptono (2020) describes it as the expected standard of excellence a business seeks to meet consumer needs. Prawirosentoso (2019) emphasizes its attributes and functions, asserting that it must align with the monetary value consumers associate with it. In a similar vein, Kotler and Armstrong (2020) contend that it's about the product's functional prowess, spanning aspects like durability, reliability, and ease of use. Sciffman (2019) views it as the embodiment of distinctive traits in a product that consumers can identify and associate with. Consolidating these views, product quality emerges as a blend of features and attributes tailored to resonate with consumer expectations and needs.

The benefits of superior product quality are numerous. Ariani (2019) highlights several advantages. A prime benefit is the enhancement of a company's reputation, leading to greater trust among consumers. Quality products also pave the way for cost savings, as satisfied customers often become brand ambassadors, reducing the need for extensive marketing efforts. This inherent product endorsement boosts market share, attracting both loyalists and newcomers to the brand. On a global scale, products of commendable quality garner international recognition, opening up global market opportunities. Additionally, well-acknowledged products naturally elevate their standing in consumer perceptions. Importantly, an unwavering commitment to product quality instills a sense of responsibility in companies, underlining their commitment to customer satisfaction.

Key indicators help ascertain the quality of a product. T jiptono (2020) enumerates several of these. Performance, the bedrock of a product, is a reflection of its inherent quality, determining if it meets or exceeds consumer anticipations. Reliability serves as a testament to a product's consistent operation and its resilience over time. The allure of supplementary features often enhances a product's appeal, providing added value to consumers. Ensuring that products adhere to stipulated specifications is pivotal, signaling the brand's promise and integrity. Durability, denoting the longevity of product use, stands as a direct measure of its quality.

Customer Satisfaction

Customer satisfaction stands as a pivotal metric that gauges the contentment level of a customer with the products or services rendered by an organization. In the face of fierce competition, especially in saturated markets, ensuring customer satisfaction becomes the linchpin of a company's longevity and success. Esteemed professionals weigh in on this concept. Saladin (2019) believes that customer satisfaction hinges on a customer's juxtaposition of their anticipations with the actual service or product they receive. Kotler and Keller (2019) define it as the resultant feeling that arises when customers measure the received value against their preconceived expectations. Hayes (2019) perceives it as a judgment stemming from an individual's experience with a product or service. Tjiptono (2020) frames it as consumers recognizing that their expectations and needs, as they pertain to a company, are being met and addressed effectively. Wirtz (2019) concludes that it's an attitude, molded by the user experience and their subsequent comparisons of products or services. Synthesizing these insights, customer satisfaction can be discerned as a reflection of customer attitudes towards the efficacy of a company's offerings (Fahlevi & Alharbi, 2021), which can oscillate between positive and negative based on the product or service performance (Ivana et al., 2021).

The dividends of cultivating customer satisfaction are manifold. As per Kotler and Keller (2019), its perks encompass fortifying a business's brand positioning, especially in hyper-competitive landscapes. Contented customers invariably act as brand evangelists, propelling the brand to newer horizons. Another offshoot is the enhancement of the business's public perception. This positive imagery, informed by the collective contentment of its customer base, aids in retaining market presence. Moreover, satiated customers inadvertently beckon potential patrons, as word of mouth regarding pleasing purchase experiences travels fast.

As businesses endeavor to keep the pulse on customer satisfaction, they need indicators that serve as touchpoints. Tjiptono (2020) underscores several such parameters. Service, often paralleled with product offerings, is paramount.

Customers invariably gravitate towards businesses that proffer exemplary, congenial service. Concurrently, maintaining product quality is non-negotiable, as it ensures a steady clientele. Pricing, another crucial factor, should ideally resonate with the consumers' fiscal capabilities, which when paired with quality products, amplifies satisfaction. Accessibility to products or services also plays a decisive role; the lesser the hurdles in procurement, the higher the satisfaction. Lastly, adept advertising, which communicates lucidly and effectively, can be instrumental in shaping and bolstering customer satisfaction.

Previous Research

Table 3. Summary Prior Research

No.	Name (Year)	Tittle	Analysis Method	Results
1	Robby(2022)	Analysis of the effect of satisfaction, product quality and price on customer loyalty at seafood restaurants in Batam city	Multiple regression analysis	Satisfaction, product quality and price have a significant effect on customer loyalty.
2	Beautiful (2022)	Effect of product quality and price on consumer loyalty with consumer satisfaction as the intervening variable.	Path analysis	Product quality and price have a significant effect on consumer satisfaction. Product quality and price have a significant effect on consumer loyalty
3	Rini (2019)	Effect of product quality and price on Grab loyalty, Semarang	Multiple regression analysis	Product quality and price have a significant effect on customer loyalty
4	Chandra (2019)	The effect of product quality and price on customer loyalty through customer satisfaction at the Kasuari Hotel	Path analysis	Product quality and price have a significan teffect on customer satisfaction. Product quality and price have a significant effect on customer loyalty
5	Stella (2021)	Effect of price and product quality on customer satisfaction Panderman Coffee shop	Multiple regression analysis	Price and product quality have a significant effect on customer satisfaction.
6	Freddy (2019)	Effect of product quality and price on consumer satisfaction at Oci Restaurant, Manado	Multiple regression analysis	Product quality and price have a significant effect on consumer satisfaction.
7	Haryoko (2020)	The effect of price and product quality on consumer satisfaction in Firman Decoration	Multiple regression analysis	Price and product quality have a significant effect on consumer satisfaction
8	Hiyori (2019)	Effect of price and product quality on customer satisfaction at Jimbaran Restaurant, Denpasar	Multiple regression analysis	Price and product quality do no have a positive and significant impact on customer satisfaction

Conceptual Framework

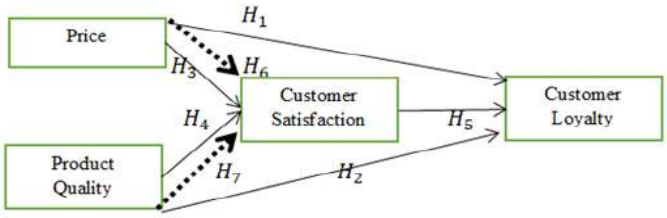

Figure 1. Conceptual Framework

3. METHODOLOGY

Sugiyono (2019) posits that researchers employ scientific methods to obtain data, aiming to describe, furnish evidence, develop, and unearth knowledge and theories that pave the way to comprehend and proffer solutions to pressing issues. The present study employs a research methodology that elucidates the interplay and influence between the independent and dependent variables. This relationship has been hypothesized in the introductory phase of the study. Adopting a quantitative approach, the research variables undergo operationalization. The essence of this quantitative research is underscored by the statistical test outcomes. This approach explicates the relationship between variables, contextualized through the interpretation of statistical test results, illuminating the association of variables under scrutiny.

Research Location and Duration

The study was spearheaded at PT. Brother Group, situated at Jalan Pulau Palu no 36, Medan. Spanning from February to July 2023, this research delved into the intricate nuances of its subject matter.

Population and Sampling

The study's demographic pivot is the consumer base of PT. Brother Group, Medan, encapsulating 92 respondents in total. A noteworthy point is that the entire population—92 respondents—was leveraged as the sample for this study. Arikunto (2020: 104) stipulates that when the population size is below 100, it's advisable to utilize the entire population as a sample. Conversely, if the population surpasses 100, the sample size can range from 10% to 25% of the total. The employed sampling modality is the saturated sampling technique, as articulated by Sugiyono (2019: 106), which entails leveraging the entire population as the sample size. For the purposes of testing validity and reliability, a separate cohort of 30 respondents, not part of the primary sample, was enlisted. Sugiyono (2019) recommends a minimum of 30 respondents for such validation endeavors.

Variable Operationalization

Sugiyono (2016: 138) delineates variables as entities, in any conceivable form, earmarked by researchers for examination, facilitating information extraction, and subsequent conclusion derivation.

Table 4. Measurements

Variable	Definition	Indicator	Scale
Customer Loyalty (Y)	the strong attitude that occurs in customers to the company shown in repurchasing and the tendency to repurchase in greater quantities.	1) Number of referrals 2) Decision to buy again 3) The decision to buy another product 4) The decision to increase the purchase amount 5) Customer retention	Likert
Price (X1)	Prices are costs created by companies or businesses aimed at potential customers and consumers in order to obtain rights to goods or services and benefit from the products or services purchased.	1. Price affordability 2. Compatibility of price with product quality 3. Price compatibility with benefits 4. Price competitiveness	Likert
Product Quality (X2)	the ability of a company to create products that have distinctive characteristics with quality that is expected to become consumer needs so that consumer expectations can be achieved.	1) Performance 2) Reliability 3) Additional privileges 4) Compliance with specifications 5) Durability	Likert
Customer Satisfaction (Z)	form of customer attitude towards the performance of goods or services offered by the company to customers. The attitude shown can be good or bad depending on the performance of the product or service itself.	1. Service 2. Product quality 3. Price 4. Product access 5. How to advertise products	Likert

Path Analysis and Hypothesis Testing

Path analysis stands as an analytical technique that delineates and validates the model of the interplay between variables, focusing on causation. Sugiyono (2019) articulates that this method scrutinizes causal relationships in the multiple regression model, particularly when independent variables have both direct and indirect implications on the dependent variable. In this research, the path analysis method manifests in two equations characterized by two substructures: X1 and X2 as independent variables, Y as the dependent variable, and Z serving as the mediating variable.

4. RESULT

Overview of Research Results

This research was conducted using PT. Brother Group, Medan as a research subject. To carry out tests in this study, researchers used primary data obtained through questionnaires. The number of samples is 92 respondents with a diversity of age, education and gender.

Based on data acquisition, it is known that in terms of age there were 25 people in the age range of 20-29 years, 31 people in the age range of 30-40 years, and 36 respondents in the age range >40 years. Based on gender, there were 47 respondents who were male and 45 who were female, while based on education level 29 of the respondents had final education <SMA/SMK, 9 respondents were at the final D-III level of education and as many as 54 respondents had educational levels end of Grade 1.

Instrument Testing

Instrument trials were carried out to find out whether the instruments compiled had good results because the good or bad of the instrument will affect whether the data is correct or not and determines the quality of the results in a study.

Validity test

Validity is a measure that shows the levels of validity or validity of an instrument. A valid or authentic instrument has high validity (Ghozali, 2018:51-52). In carrying out the validity test, the researcher conducted a direct test according to the number of respondents and the same respondents, to determine whether the questions prepared by the researcher were appropriate or not to be asked of the respondents.

a. Price Variable Validity Test (x1)

The number of question items on the price variable (x 1) is a total of 8 questions. A description of whether or not the questionnaire given to the respondents is valid or not is presented in Table 5 below.

Table 5 Price Variable Validity Test (x1)

Questionnaire	r statistic	r table	Status
X 1.1	0.500 _	0.2 02	Valid
X 1.2	0.653 _	0.2 02	Valid
X 1.3	0.581 _	0.2 02	Valid
X 1.4	0.579 _	0.2 02	Valid
X 1.5	0.740 _	0.2 02	Valid
X 1.6	0.708 _	0.2 02	Valid
X 1.7	0.503 _	0.2 02	Valid
X 1.8	0.483 _	0.2 02	Valid

Source: Processed SPSS 22 Validity Test data

Based on the data table 5 above, the eight questions from testing 92 respondents have a value of r count > from the value of r table, thus the questions in "Test of the Validity of Price Variables (x1)" are declared valid.

b. Product Quality Variable Validity Test (x2)

The number of questions on the product quality variable (x2) is 10 questions. A description of the validity status of the questionnaire given to the respondents is presented in Table 6 below.

Table 6. Test the Validity of Product Quality Variables (x2)

Questionnaire	r count	r table	Status
X2.1	0.342 _	0.2 02	Valid
X2.2	0.404 _	0.2 02	Valid
X2.3	0.233 _	0.2 02	Valid
X2.4	0.747 _	0.2 02	Valid
X2.5	0.549 _	0.2 02	Valid
X2.6	0. 721	0.2 02	Valid
X2.7	0. 519	0.2 02	Valid
X2.8	0.462 _	0.2 02	Valid
X2.9	0.759	0.2 02	Valid
X2.10	0.613	0.2 02	Valid

Source: Processed SPSS 22 Validity Test data

Based on the data table 6 above , the ten questions from testing 92 respondents have a value of r count > from the value of r table . Thus the question items on " Test the Validity of Product Quality Variables (x2) " are declared valid .

c. Test the Validity of Customer Loyalty Variable (Y)

The number of questions on the variable Customer Loyalty (Y) is a total of 10 questions. A description of the validity status of the questionnaire given to the respondents is presented in Table 7 below.

Table 7. Validity Test of Customer Loyalty Variable (Y)

Questionnaire	r count	r table	Status
Y1	0.793 _	0.2 02	Valid
Y 2	0.783 _	0.2 02	Valid
Y 3	0.592 _	0.2 02	Valid
Y 4	0. 603	0.2 02	Valid
Y 5	0.750 _	0.2 02	Valid
Y 6	0.654 _	0.2 02	Valid
Y 7	0.795 _	0.2 02	Valid
Y 8	0.328 _	0.2 02	Valid
Y 9	0.612	0.2 02	Valid
Y 10	0.583	0.2 02	Valid

Source: Processed SPSS 22 Validity Test data

Based on the data table 7 above, the ten questions from testing 92 respondents have a value of r count > from the value of r table, thus the questions in "Test the Validity of Customer Loyalty Variables (Y)" are declared valid.

d. Test the Validity of Customer Satisfaction Variables (Z)

The number of questions on the variable customer satisfaction (Z) is a total of 10 questions. Description of the information in Table 8 below :

Table 8. Validity Test of Customer Satisfaction Variables (Z)

Questionnaire	r count	r table	Status
Z1	0.500 _	0.2 02	Valid
Z 2	0.653 _	0.2 02	Valid
Z 3	0.581 _	0.2 02	Valid
Z 4	0.579 _	0.2 02	Valid
Z 5	0.740 _	0.2 02	Valid
Z 6	0.708 _	0.2 02	Valid
Z 7	0.503 _	0.2 02	Valid
Z 8	0.483 _	0.2 02	Valid
Z 9	0.278	0.2 02	Valid
Z 10	0.457	0.2 02	Valid

Source: Processed SPSS 22 Validity Test data

Based on the data Table 8 above, the ten questions from testing 92 respondents have a value of r count > from the value of r table, thus the questions on "Variable Validity Test of Customer Satisfaction (Z)" are declared valid.

Reliability Test

This reliability test is used to test the consistency of data over a certain period of time, namely to find out how far the measurements used can be trusted or relied upon (Ghozali, 2018). Reliability shows how much data is displayed without error so that it can measure data stability and measure data consistency from research tools such as questionnaires. In this study the reliability of the data will be tested through the Cronbach's Alpha formula (Arikunto, 2019)

Based on result, it is known that the Cronbach alpha value obtained in the "price" variable reliability test is 0.767. Where this shows that the reliability of the data is acceptable and meets the requirements to be continued in the classical assumption test. It is known that the Cronbach alpha value obtained in the "product quality" variable reliability test is 0.728. Where this shows that the reliability of the data is acceptable and meets the requirements to be continued in the classical assumption test. It is known that the Cronbach alpha value obtained in the "customer loyalty" variable reliability test is 0.761. Where this shows that the reliability of the data is acceptable and meets the requirements to be continued in the classical assumption test. It is known that the Cronbach alpha value obtained in the "customer satisfaction" variable reliability test is 0.731. Where this shows that the reliability of the data is acceptable and meets the requirements to be continued in the classical assumption test.

Classic assumption test

Normality Test

Normality test is a test about the normality of data distribution. In this study using the P-Plot test which can be seen in the image below:

a. First equation: Price (X1) and Product Quality (X2) on Customer Satisfaction (Z).

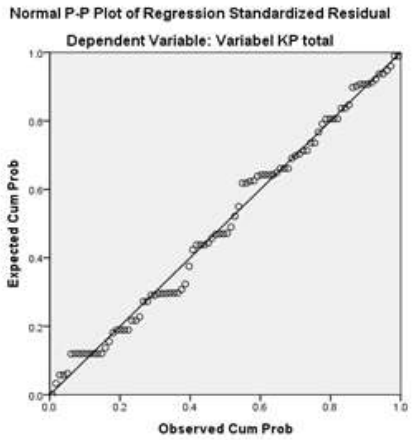

Figure 2. P-Plot x1 and x2 against z

Source: Personal Documentation

Based on the Figure 2 above, it is known that the points in the image follow a diagonal line , which according to Imam Ghozali (2018) "the regression model is said to be normally distributed if the plotted data (dots) that describe the actual data follow the diagonal line . In other words, it can be concluded that the data contained in this study are related to the effect of price (X1) and product quality (X2) on customer satisfaction (Z) which can be stated to be normally distributed.

b. The second equation: Price (X1), Product Quality (X2), and Customer Satisfaction (Z) on Customer Loyalty (Y).

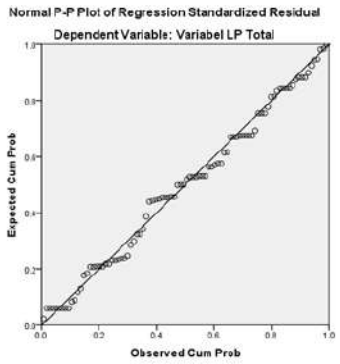

Figure 3. P-Plot x1, x2, and Z against Y

Source: Personal Documentation

In Figure 3 above it can be seen that the dots in the image follow the same diagonal line as Figure 4.1 before, this shows that the data distribution influences Price (X1), Product Quality (X2) Customer Satisfaction (Z), on customer loyalty (Y) can be stated to be normally distributed.

Multicollinearity Test

According to Imam Ghozali (2019), multicollinearity symptoms are absent when the tolerance value is greater than 0.100 and the Variance Inflation Factor (VIF) is less than 10.00. For the first equation that examines the impact of Price (X1) and Product Quality (X2) on Customer Satisfaction (Z), the following results are derived from the researcher's questionnaire data:

- Price (X1) has a tolerance value of 0.874 and a VIF value of 1.144.
- Product Quality (X2) also presents a tolerance value of 0.874 and a VIF value of 1.144. Given that the tolerance values are greater than 0.100 and the VIF values are less than 10.00, this indicates the absence of multicollinearity symptoms in the data related to the first equation.

For the second equation analyzing the influence of Price (X1), Product Quality (X2), and Customer Satisfaction (Z) on Customer Loyalty (Y), the researcher's data reveals:

- Price (X1) exhibits a tolerance value of 0.668 and a VIF value of 1.498.
- Product Quality (X2) holds a tolerance value of 0.778 and a VIF value of 1.285.
- Customer Satisfaction (Z) registers a tolerance value of 0.605 and a VIF value of 1.653. Considering the tolerance values exceed 0.100 and the VIF values remain under 10.00 for all these variables, it confirms that there are no signs of multicollinearity within the data related to the second equation

Heteroscedasticity Test

According to Ghozali (2009) the heteroscedasticity test aims to test whether in the regression model there is an inequality of residual variance from one observation to another. The criteria used in the Heteroscedasticity test are as follows:

1) If the independent variable is statistically significant to the absolute value of the dependent variable, then heteroscedasticity occurs.
2) If the independent variable is statistically insignificant to the absolute value of the dependent variable, then homoscedasticity occurs.
   a. First equation: Price (X1) and Product Quality (X2) on Customer Satisfaction (Z).

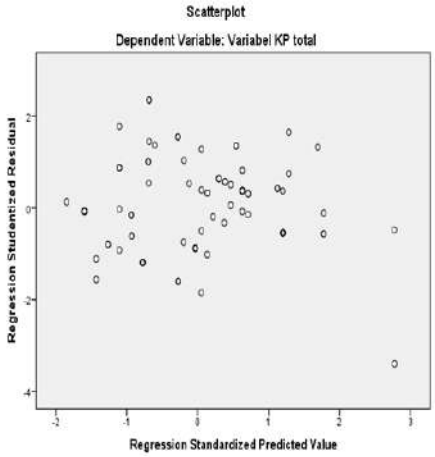

Figure 4. Scatter Plot of First Equation

Source: Personal documentation

Based on Figure 4 above, it is known that Based on the figure above it is known that the data points are spread out, and do not have or follow a certain pattern and this shows that the data owned by the researcher shows no symptoms of heteroscedasticity.

As the description in the first equation is related to data heteroscedasticity, the explanation related to data heteroscedasticity in the second equation can be seen in the figure and table below:

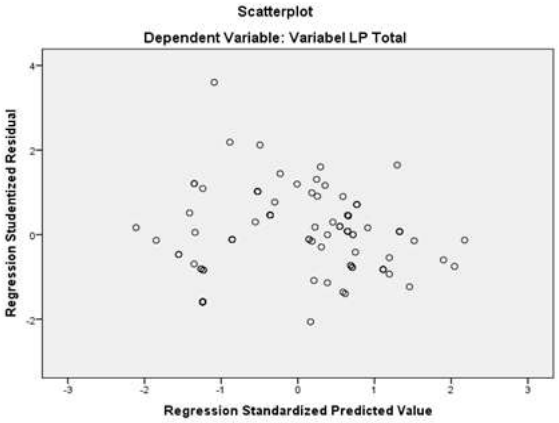

Figure 5. Scatter Plot of the Second Equation

Source: Personal documentation

Based on Figure 5 above, it is known that based on the figure above it is known that the data points are spread out, and do not have or follow a certain pattern and this shows that the data owned by the researcher shows no symptoms of heteroscedasticity.

Path Analysis

The results of the path analysis test in the first equation can be seen in the table below:

Equation 1

Table 9. Standard Coefficient of the first Equation

Model		Unstandardized B	Coefficients std. Error	Standardized Betas	Coefficients
1	(Constant)	10,754	2,954		
	Price	.443	085	.462	
	Product quality	.299	.090	.292	

a. Dependent Variable: customer satisfaction

Source: Processed SPSS 22 data

$$Z = Z\_1\ X\_1 + Z\_2\ X\_2 + er \ldots\ldots\ldots\ldots\ldots\ldots (1)$$
$$Z = 0.462x1 + 0.292x2 + 0.618$$

The explanation of the equation above is as follows: The value of the price variable beta coefficient (x1) is 0.462, if the value of the other variables is constant and the x1 variable has increased by 1%, the customer satisfaction variable (Z) will increase by 46.2% and vice versa, if the value of the x1 variable has decreased 1% then the customer satisfaction variable (Z) will decrease by 46.2%. The value of the beta coefficient of the product quality variable (x2) is 0.292, if the value of the other variables is constant and the x2 variable has increased by 1%, the customer satisfaction variable (Z) will increase by 29.2% and vice versa, if the value of the x1 variable has a 1% decrease, the customer satisfaction variable (Z) will decrease by 29.2.2%. The error value of 0.618 or 61.8% is the influence of other variables that affect the customer satisfaction variable (Z) excluding the price variable (x1) and the product quality variable (x2).

Equation 2
The results of the path analysis test in the first equation can be seen in the table below:

Table 10. Second Equation Coefficient Standard Table

Model	Unstandardized B	Coefficients std. Error	Standardized Betas	Coefficients
1 (Constant)	-3,098	3,762		
Price	.301	.115		.226
Product quality	089	.113		063
customer satisfaction	.784	.126		.565
a. Dependent Variable: customer loyalty				

Source: Processed SPSS 22 data

$$Y = P\_1\ X\_1 + P\_2\ X\_2 + P\_2\ Z\ er \ldots\ldots\ldots\ldots\ldots\ldots (2)$$
$$Y = 0.226x1 + 0.063X2 + 0.565Z + 0.454$$

The explanation of the equation above is as follows: The beta coefficient value of the price variable (x1) is 0.226, if the value of the other variables is constant and the variable x1 has increased by 1%, the customer loyalty variable (Y) will increase by 22.6% and vice versa, if the value of the variable x1 has decreased 1% then the customer loyalty variable (Y) will decrease by 22.6%. The beta coefficient value of the product quality variable (x2) is 0.062. If the value of the other variables is constant and the x2 variable has increased by 1%, the customer loyalty variable (Y) will increase by 6.2% and vice versa, if the x1 variable value has decreased by 1%, the customer loyalty variable (Y) will decrease by 6.2%. The beta coefficient value of the customer satisfaction variable (Z) is 0.565. If the value of the other variables is constant and variable Z has increased by 1% then the customer loyalty variable (Y) will have increased by 56.5% and vice versa, if the value of variable x1 has decreased by 1% then the customer loyalty variable (Y) will have decreased by 56.5%. The error value of 0.454 or 45.4% is the influence of other variables that affect the customer loyalty variable (Y) excluding the price variable (x1), product quality variable (x2), and customer satisfaction variable (Z).

The influence of independent variables and intervening variables on the dependent variable partially is as follows: The results of the t test on the price variable (x1) obtained a t count value of 2.615 greater than the t table value of 1.661 and a significance value of 0.011 greater than 0.05. So based on this data it can be concluded that H01 is rejected and H1 is accepted, which means that the price variable has no significant effect on customer loyalty (Y) at PT Brother Group, Medan.

The results of the t test on the product quality variable (x2) obtained a t count value of 0.788 which is smaller than the t table value which is 1.661 and a significance value of 0.431 is greater than 0.05. So based on this data it can be concluded that H02 is accepted and H2 is rejected, which means that the quality variable has no effect and is not significant on customer loyalty (y) at PT Brother Group, Medan.

The results of the t test on the customer satisfaction variable (Z) obtained a t count value of 6.222 greater than the t table value of 1.661 and a significance value of 0.000 which is less than 0.05. So based on this data it can be concluded that H05 is rejected and H5 is accepted, which means that the customer satisfaction variable has a significant and significant effect on customer loyalty (Y) at PT Brother Group, Medan.

5. DISCUSSION

We first need a clear understanding of the types of products and their respective price ranges at PT. Brother Group, Medan to contextualize the findings. For instance, PT. Brother Group, Medan sells products like plastic poly bags, kilo plastic, and plastic trash. Their prices range from IDR 19,000 to IDR 26,000 per kilogram. Interestingly, their product pricing is between IDR 500 to IDR 2000 higher than their competitors. For this study, primary data was sourced from 92 respondents using questionnaires. The sample consisted of a diverse group in terms of age, education, and gender. Age-wise, 25 respondents were between 20-29 years, 31 were between 30-40 years, and 36 were aged over 40 years. Gender distribution was almost even, with 47 males and 45 females. In terms of education, 29 had completed below high school, 9 had a diploma, and 54 had a bachelor's degree.

The findings from the study revealed that while price does influence customer loyalty, the impact is not significant enough to retain customers at PT. Brother Group, Medan. In terms of product quality, its influence on customer loyalty is minimal. The average perceived product quality is moderate, indicating no standout quality aspect for the company's offerings. In terms of customer satisfaction, both product price and quality were found to affect satisfaction levels. PT. Brother Group, Medan's product pricing and quality both meet the average satisfaction level of their customers. Customer satisfaction, in turn, plays a crucial role in determining customer loyalty at PT. Brother Group, Medan.

Using the Sobel Test, the study found that product price and quality both influence customer loyalty when mediated by customer satisfaction. In other words, both product price and quality indirectly affect customer loyalty at PT. Brother Group, Medan through the lens of customer satisfaction. To enhance customer loyalty in the future, PT. Brother Group, Medan should prioritize boosting customer satisfaction, currently at an average level.

6. CONCLUSION

Based on the research conducted, several conclusions can be drawn regarding PT Brother Group in Medan. Price does not have a significant effect on customer loyalty, as evidenced by a calculated t-value of 2.615, which is greater than the t-table value of 1.661, and a significance value of 0.011. Similarly, product quality does not significantly influence customer loyalty, as the calculated t-value is 0.788 and the significance value stands at 0.431. However, price plays a pivotal role in determining customer satisfaction, with a t-count value of 5.243 and a significance value of 0.000. Additionally, product quality also holds significant sway over customer satisfaction, with a t value of 3.314 and a significance value of 0.001. Furthermore, customer satisfaction has a notable impact on customer loyalty, demonstrated by a t value of 6.222 and a significance value of 0.000. Interestingly, when factoring in customer satisfaction as an intervening variable, both price and product quality affect customer loyalty. This is seen with a calculated t-value of 3.941633 for price and 2.930647902 for product quality, both of which are greater than the t-table value of 1.661.

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