The Mediating Role of Customer Satisfaction and Customer Trust in the Relationship between Product Quality and Customer Loyalty

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ABSTRACT: This study aims to examine the effect of product quality on customer loyalty mediated by customer satisfaction and customer trust. This research is a quantitative research with a case study in the company CV. JMF Sidoarjo, Indonesia by distributing questionnaires to 109 customers. Data is processed using Structural Equation Modeling with Smart PLS 3 program. The results showed that product quality had a significant direct effect on customer satisfaction, trust and loyalty. Product quality has no significant effect on customer satisfaction and trust. Likewise, customer satisfaction and trust cannot mediate the relationship between product quality and customer loyalty. All relationships point in a positive direction.This work helps the product manufacturing business better understand consumer behavior, demands, and preferences, which can boost consumer satisfaction, trust, and loyalty. This study adds to the body of knowledge on the causes of consumer loyalty.

KEYWORDS : *Customer, loyalty, quality, satisfaction, trust*

I.   INTRODUCTION

Competition among fiberglass companies has arisen as a result of the numerous new and developing enterprises in the field of manufacturing production of fiberglass. Methods and tactics are required to ensure that the firm continues to run smoothly, retains customers, and survives in the face of strong competition. In the face of dangers and rivalry in the fiberglass industry, businesspeople must prioritize quality, trust, and the ability to give consumers with satisfaction for their products if they hope to win their business. Because they are a source of revenue for every organization, consumers might be seen as the most crucial component in this situation. Because using and purchasing marketing products and services is considered consumer behavior.Consumer behavior, according to [1], is the study of how people choose, pay for, utilize, and then discard products, services, ideas, or encounters to fulfill their wants and needs. In a developed market, losing a customer would be terrible.

Customers are a crucial component that the business must take into account. Given that clients have the potential for future growth, they are an asset that can decide a company's success. Therefore, business owners should give their clients a certain level of satisfaction. In [2, p. 353],consumer satisfaction is a cognitive state in which the customer is content with the parity or disparity between the benefits received in comparison to the costs incurred. According to[3], a business organization's primary objective is to generate items or services that meet the wants of its customers.According to [4]a person's emotions of happiness or dissatisfaction that appear after contrasting views of a product's performance (results) with their expectations, corporations are attempting to produce satisfied consumers. The benefits of offering great service include increased customer acquisition and decreased customer attrition.

To win customer loyalty, fiberglass producer CV. JMF Sidoarjo tries to improve and emphasize product quality, consumer trust, and consumer satisfaction. Product quality plays a role in customer loyalty because happy customers are those who perceive a high-quality product after buying and using it. Trust is an equally important factor in retaining customers. This claim is supported by the opinion of experts who assert that trust is a key component of customer loyalty and an important foundation for building and upholding lasting relationships [5].Therefore, it can be inferred that trust is a crucial factor in boosting customer loyalty, particularly when developing long-term relationships, and that trust is crucial to the company's long-term viability. Additionally, customers will seek out businesses that manufacture high-quality goods at competitive

costs while also catering to their needs. Customers are satisfied with the product when they feel at ease and have a favorable view of the surroundings and the effectiveness of the goods and services the business offers in accordance with customer expectations.The degree to which the product's perceived performance satisfies the buyer's expectations, according to [6], is what they refer to as consumer satisfaction. The customer is satisfied if the product performs up to their expectations since, in [7] opinion, strong service quality can improve a brand's reputation while receiving poor service will damage it. This relates to client satisfaction, and via customer satisfaction, a connection or connection between consumers and business owners will be created. Customer satisfaction must always be a priority for any business that wants to survive in the market. Consumers that are satisfied will not only make more purchases (re-purchases), but they will also be able to refer other people to the business (new consumers). In order to retain consumer satisfaction, the organization must increase product quality [8]. Numerous studies have demonstrated how contentment affects loyalty. Loyalty, in the opinion of[9], is the choice made by a client to voluntarily continue their subscription to a certain business for an extended period of time.

This study intends to investigate how customer satisfaction and trust, two mediators of consumer loyalty, affect product quality. A different perspective on the link between the four variables mentioned above can be obtained by modeling with two mediating variables. The following is the order of these papers: The background information and discussion of the literature study are found in Section 1. The methodology is discussed in Section 2. Data gathering, data processing, analysis of findings, and discussion are all covered in Section 3. The research findings are concluded in Section 4.

II.   METHOD

The research technique is fundamentally a scientific process to gather data with a particular goal and application, where the data is valid with a purpose able to identify, prove, and develop knowledge before being utilized to understand, solve, and foresee problems[10, p. 2].This study is quantitative in nature. In order to test a preconceived hypothesis, quantitative research tests specific populations or samples, typically employing a random sampling technique, research tools for data collecting, and quantitative/statistical analysis [11, p. 56].Due to the relationship between the variables to be examined and the goal of presenting the structure, an accurate description of the facts of the relationship between the variables to be researched must be developed using a descriptive research method and verification analysis. According to the facts that are apparent or as they are, descriptive research seeks to describe or apply the current state of the object or study issue. Verification demonstrates that studies seek to determine how the independent variable affects the dependent variable. This time, the design of the research is an explanation of the data utilized to address the issue of client loyalty.Using surveys, research is done to test hypotheses and explain causal relationships. By generating a list of statements to be sent to respondents, survey research is defined as research techniques used to acquire data from both large and small groups, but the data evaluated comes from the sample[10, p. 4]. This is representative of the population, and it was discovered the relative occurrence, distribution, and connection between sociological and psychological characteristics. Population is a broad phrase for a group of things or persons that the researcher has chosen to study and from which conclusions can be formed [11, p. 15].

The population in this study are all consumers of CV. JMF Sidoarjo which number of customers is 150 people.Considering that the existing population is very large in number, making it impossible to examine the entire existing population, then to carry out sampling using the Slovin formula as follows[12].

$$n = \frac{N}{1 + N\,e^2}$$

Where:
n: Sample size, N: Total population, e: Percentage of inaccuracy due to error (5%).

$$n = \frac{150}{1 + 150\,.0,05^2}$$

$$n = \frac{150}{1 + (150 \times 0.0025)}$$

$$n = 109,09$$

The sample in this study were 109 people.

May consider operational understanding of a variable as part of a study explaining how to measure it or as some kind of implementation guide for measuring it. The four variables under investigation in this study are as follows: Independent variable: Product Quality (X), the mediation variables consisting of: Customer Satisfaction (Z1) and Customer Trust (Z2) and the dependent variable: Customer Loyalty (Y).
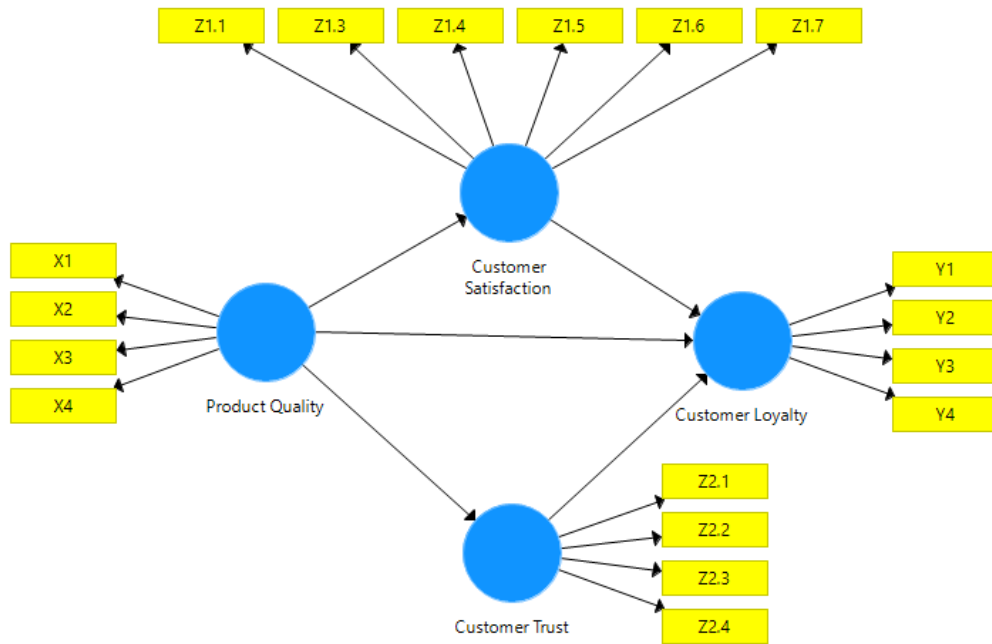
Source: Processed by the author with SEM SmartPls-3
Fig 1. Structural model

Hypothesis
The following statement describes the structural model's hypothesis:
- H1: Customer satisfaction has a significant direct effect on customer loyalty.
- H2: Customer trust has a significant direct effect on customer loyalty.
- H3: Product quality has a significant direct effect on customer loyalty.
- H4: Product quality has a significant direct effect on customer satisfaction.
- H5: Product quality has a significant direct effect on customer trust.
- H6: Customer satisfaction can mediate product qualityon customer loyalty.
- H7: Customer trust can mediate product quality on customer loyalty.

Researchers assessed respondents' responses using a Likert scale. Five response choices, from "strongly disagree" to "strongly agree," are provided. The Likert scale is a measurement tool that asks participants to rate how much they agree or disagree with a series of statements about the stimulus [13, p. 298]. Each assertion receives a number rating between 1 and 5. Where, strongly disagree: 1, disagree: 2, doubt: 3, agree: 4, strongly agree: 5. Based on data from the variables gathered from the group of people researched, descriptive analysis seeks to give a general summary of the research topic [14, p. 126]. SEM SmartPLS-3 was used to examine the data that were gathered for this investigation.
The indicators used for the questionnaire of each variable are as follows:
- Product quality (4 indicators): performance, features, conformance to specification and aesthetics[15].
- Customer satisfaction (6 indicators): fulfillment of consumer expectations, attitude or desire to use the product, recommend to other parties, service quality, loyalty and good reputation[16].
- Customer trust (4 indicators): integrity, good faith, competence and consistency of seller behavior[17].
- Customer loyalty (4 indicators): make repeat purchases, great liking for the brand, the belief that certain brands are the best brands and brand recommendations to others[18].

III.   RESULTS AND DISCUSSION

A. Measurement Indicator (Outer Model)
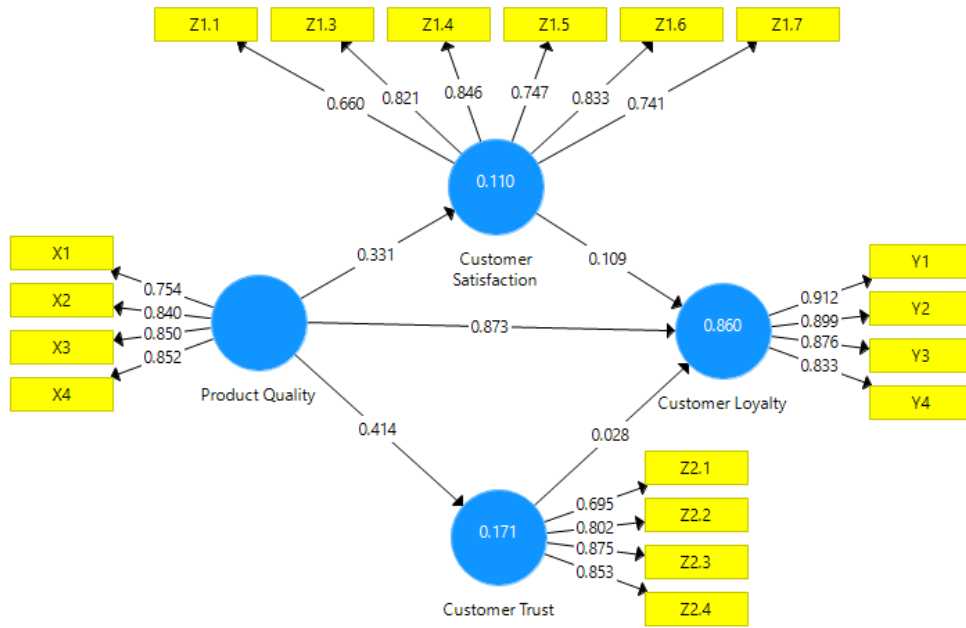
Source: Processed by the author with SEM SmartPls-3
Fig 2. PLS Analysis Diagram

Validity Value

TABLE1. Outer loading

Dimensions	Customer Loyalty	Customer Satisfaction	Customer Trust	Product Quality
X1				0.754
X2				0.840
X3				0.850
X4				0.852
Y1	0.912			
Y2	0.899			
Y3	0.876			
Y4	0.833			
Z1.1		0.660		
Z1.3		0.821		
Z1.4		0.846		
Z1.5		0.747		
Z1.6		0.833		
Z1.7		0.741		
Z2.1			0.695	
Z2.2			0.802	
Z2.3			0.875	
Z2.4			0.853	

Source: Outputof SEM SmartPls-3

Each item or sign value outer loading > 0.54 (with sample size of 109 respondents) from the outside loading table above. Limitations placed on external load values by Hair et al. in[19](> 0.5 with a sample of 120 respondents and > 0.55 with a sample of 100 respondents) continue to be valid as long as the conditions are met. Therefore. It was determined that each sign was a valid indicator.

Discriminant Validity

When the goal variable load factor is greater than the other variable load factors, the indicator is considered valid.

TABLE2. Cross loading

Dimensions	Customer Loyalty	Customer Satisfaction	Customer Trust	Product Quality
X1	0.705	0.257	0.197	0.754
X2	0.756	0.311	0.432	0.840
X3	0.732	0.289	0.386	0.850
X4	0.745	0.232	0.342	0.852
Y1	0.912	0.367	0.388	0.800
Y2	0.899	0.390	0.334	0.821
Y3	0.876	0.318	0.375	0.827
Y4	0.833	0.353	0.368	0.795
Z1.1	0.219	0.660	0.164	0.160
Z1.3	0.320	0.821	0.246	0.256
Z1.4	0.397	0.846	0.200	0.352
Z1.5	0.234	0.747	0.223	0.144
Z1.6	0.337	0.833	0.157	0.286
Z1.7	0.322	0.741	0.153	0.265
Z2.1	0.205	0.245	0.695	0.169
Z2.2	0.325	0.226	0.802	0.320
Z2.3	0.376	0.204	0.875	0.359
Z2.4	0.389	0.151	0.853	0.421

Source: Outputof SEM SmartPls-3

The aforementioned table demonstrates that the customer loyalty indicators' (Y1 to Y4) load factor is higher than that of the other variables. The load factor of Y1 of customer loyalty is 0.912 higher than the load factors of customer satisfaction (0.367), customer trust (0.388), and product quality (0.800), for the purpose of explanation. Other indicators follow a similar pattern. Potential contracts therefore have a stronger ability to forecast one block indicator than the other block indicators.

Construct Reliability and Construct Validity

The assessment of component reliability comes next. Latent variable development reliability is measured through construction reliability. A value must be greater than 0.70 to be deemed credible. The Cronbach Alpha value reveals the reliability rating.

TABLE3. Construct Reliability and Construct Validity

Dimensions	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Customer Loyalty	0.903	0.903	0.932	0.775
Customer Satisfaction	0.870	0.895	0.901	0.604
Customer Trust	0.828	0.865	0.883	0.655
Product Quality	0.843	0.844	0.895	0.681

Source: Outputof SEM SmartPls-3

Belief in the accuracy with which the metric consistently assesses its underlying components [20]. Cronbach's Alpha and Combined Reliability are the evaluation tools. According to [21]. dependability is defined as a composite reliability value > 0.7 and a predicted Cronbach alpha value > 0.7 [22]. It is also obvious from the table above that each construct has a Cronbach's alpha value greater than 0.7. Consequently. each building can be regarded to be trustworthy. The latent variable customer trust. for instance. has a Cronbach's alpha of 0.828>0.7. So variable customer trust is trustworthy. The same is true for any variables with values greater than 0.7.

Convergent Validity

Factor sizes should be adequately correlated. according to the principle that determines convergent validity [22]. The AVE value was used to evaluate the convergence validity of the configuration with the reflex index. The AVE must be at least 0.5. According to [21].An AVE value of 0.5 or higher can explain 50% or more of the object variance from the table previously. Each latent variable has an AVE value greater than 0.5. as can be observed. The latent variable Customer Satisfaction. for instance. has an AVE of 0.604 > 0.5. As a result. the variable "Customer Satisfaction" is valid. All of these holds true for various variables with AVE values greater than 0.5.

B. Structural Model (Inner Model)

Once the external model's requirements are met by the inferred model. The structural model's inner models will then be looked at. The R-square values for the variables are:

TABLE4. R-Square

Dimensions	R-Square
Customer loyalty	0.856
Customer satisfaction	0.101
Customer trust	0.164

Source: Outputof SEM SmartPls-3

The table above shows value of R-Square in customer loyalty variable that is 0.856. This means that product quality, customer satisfaction and customer trust together can explain the customer loyalty variance of 85.6%. Also, in customer satisfaction is affected by product quality 10.1% and customer trust is affected by product quality 16.4%, this means that there are other factors that have a significant influence on customer satisfaction and customer trust besides product quality.

Hypothesis test result is as below explanation:

TABLE5. Hypothesis test result

Relationship	Original sample	Standard Deviation	T Statistic	P Values
Customer Satisfaction → Customer Loyalty	0.109	0.069	1.575	0.116
Customer Trust → Customer Loyalty	0.028	0.080	0.348	0.728
Product Quality → Customer Loyalty	0.873	0.060	14.507	*0.000*
Product Quality → Customer Satisfaction	0.331	0.118	2.809	*0.005*
Product Quality → Customer Trust	0.414	0.113	3.655	*0.000*
Product Quality → Customer Satisfaction →Customer Loyalty	0.036	0.033	1.094	0.274
Product Quality → Customer Trust → Customer Loyalty	0.012	0.037	0.313	0.755

Source: Outputof SEM SmartPls-3

The following explanation is the final outcome of the hypothesis testing:
There are 3 Hypotheses which are accepted:
- Product quality → customer loyalty
- Product quality → customer satisfaction
- Product quality → customer trust

Because the P values are all smaller than 0.05. They are all positive.
There are 4 Hypotheses which are rejected:
- Customer satisfaction → customer loyalty
- Customer trust → customer loyalty
- Product Quality → Customer Satisfaction → Customer Loyalty
- Product Quality → Customer Trust → Customer Loyalty

Because the P Values are all greater than 0.05. They are all positive.

C. Discussion

The results of research where 3 hypotheses are accepted and 4 hypotheses are rejected provide sufficient discussion space to show new things related to the relationship between the variables studied which raises new assumptions regarding the dominant variable that has not yet been included in the topic which is also particularly behavior in the research place that allows results like this.

Customer loyalty, customer satisfaction, and customer trust are directly and significantly positively impacted by the quality of the product. This implies that when the product quality generated increases, it will have a direct effect on growing satisfaction, trust and loyaltyto customers[23]; [24]; [25]so that it will provide positive things for the company's growth. In terms of quality as customer expectations and the most important thing is to maintain the consistency of good quality from time to time. How to build a culture of behavior towards quality in the company, a culture of openness in the sense of being brave in conveying problems to find solutions together as well as a culture of continuous learning and improvement.

In previous studies, according to the data, client loyalty is considerably and favorably correlated with both trust and customer satisfaction[5]; [25]; [26];[27]. In this study customer satisfaction and trust have no significant effect on customer loyalty, it's just that when customer satisfaction and trust together with product quality can have a strong effect of up to 85.6% on customer loyalty, this shows how dominant the influence of product quality is on loyalty. customers indicated by the highest t-count value, namely 14.507 compared to customer satisfaction of 1.575 and customer trust of 0.348.

It's just that product quality has no significant effect on customer satisfaction and customer trust. That indicates that there are other variables and can be very dominant in being able to provide satisfaction and trust to customers. In an industry that produces products, it is not only product quality that is required, price and delivery reliability as well as service quality (especially after sales service) are also highly needed by customers. Even with the conditions and pressures of harsh economic conditions encouraging customers to prioritize competitive prices with the prerequisites of good product quality and delivery reliability[28].

Because there is a strong direct correlation between product quality and customer loyalty, and no discernible correlation exists between product quality and customer satisfaction and trust, customer satisfaction and customer trust are unable to mediate this relationship.

From the description above the discussion can be narrowed down to the very large direct role of product quality to create loyal customers, while it is necessary to pay attention to other variables (price, delivery reliability & after sales service) in order to provide satisfaction and trust to customers and ultimately strengthen customer loyalty.

IV.CONCLUSION

The study's findings are as follows:
- Customer loyalty is insignificantly directly impacted by customer satisfaction.
- Customer loyalty is insignificantly directly impacted by customer trust.
- Customer loyalty is significantly directly impacted by product quality.
- Customer satisfaction is significantly directly impacted by product quality.
- Customer trust is significantly directly impacted by product quality.
- Customer satisfaction cannot be a mediator between product quality and customer loyalty.
- Customer trust cannot be a mediator between product quality and customer loyalty.

When the quality of the product produced increases well, it will have a direct effect on the growth of satisfaction, trust and loyalty to customers so that it will provide positive things for the company's growth. Quality as customer expectations and the most important thing is to maintain good quality consistency from time to time. How to build a culture of behavior towards quality in the company, a culture of openness in the sense of daring to raise problems to find solutions together as well as a culture of continuous learning and improvement.

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