

Customer Satisfaction and Customer Loyalty Optimization by Improving Product Quality: Mediating Role of Customer Satisfaction

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Abstract

The objective of the study is to investigate the role of product quality in customer satisfaction optimization, to investigate the role of customer satisfaction in customer loyalty optimization, to explore the role of product quality in customer loyalty optimization and to investigate the mediating effect of customer satisfaction between product quality and customer loyalty. Quantitative research methodology and convenience sampling is used in this study. Survey responses were collected and data was analyzed by using SPSS. The results of the research shows that there is a strong effect of product quality on customer satisfaction and customer loyalty. There is a significant effect of customer satisfaction on customer loyalty. The results also depict that customer satisfaction mediates the effect of product quality on customer loyalty. This study will help practitioners and managers to understand the concept as well as practically understand how they can satisfy and retain customers by improving product quality. The limitations of the study is that there is a need to study factors other than quality which can contribute in customer satisfaction and customer loyalty.

Introduction

Due to increased commercial competition in this era of globalization, firms must perform exceptionally well and be flexible in order to stay competitive. Businesses need to have a defense strategy to keep clients when the business sector is becoming more competitive. This strategy should include faster delivery times, superior customer service, and a high level of empathy for customers to compete (Purwati, et al. 2020). Physical goods, services, organizations, and concepts are all available products (Mahsyar and Surapati 2020). Anything that can be made available to the public to meet a need or desire is considered a product (Keller and Kotler 2009). The product has many sophisticated features, such as wrappers, color, price, Prestige Company, and passenger, all of which can be handled, touched and not touched. The product is all that the business was founded to be able to provide in order to attract customers and meet their requirements and desires (Stanton, et al. 2004). Product quality means to a product's capacity to fulfill its intended purpose. It encompasses the product's general robustness, accuracy, dependability, simplicity of use and maintenance, and other important qualities. The ability of a product to execute its proposed purposes, including whole product quality, accuracy and reliability, ease of usage and maintenance, and further essential characteristics is strongly related to its quality. Quality of a

product, then is a combination of attributes and traits of goods that can fulfil needs. This combines knowledge about a product's density, reliability, comfort of usage, upkeep, and other features. Every product given by company will be unique and undoubtedly have features that set it apart from a competitor's product, even while the products are similar in type, giving the products a competitive edge in capturing the market.(Kotler and Armstrong 2004).

Due to the effects of globalization and technological advancement, new competitors enter the market, causing new products to emerge, rivalry to intensify, market shares to decline, and lower repurchase intentions, which lowers an organization's sales volume. Additionally, the difficulties of meeting the increasing demands and expectations of customers force modern businesses to prioritize customer satisfaction, product quality, and repurchase intentions, all of which eventually lead to customer loyalty, which is vital to the organization's overall survival(Nuridin 2018). Actually, every aspect of an organization's production should be directed toward satisfying the needs and expectations of its customers. As a result, the organization should abandon its previous production pattern because, if the needs and expectations of its customers are not met by a significant improvement in every aspect of the organization's production, they may choose to use that of its competitors(Razak, et al. 2016). Satisfaction is a positive emotion that consumers experience or a letdown that happens when they contrast their own expectations with the apparent performance of a product(Kotler 2000). When the customer's assessment of the value they obtained from a transaction is equal to their assessment of the quality of the services in relation to their acquisition and pricing costs, customer satisfaction is achieved(Jahanshahi, et al. 2011). Customer satisfaction is the feeling that arises from evaluating the experience of consuming products or services (Baloglu 2002).Customer satisfaction defined as the feedback that customers provide in the form of evaluation after actually purchasing and using a product and also comparing it with their own expectations and desires has been shown to influence customers' repurchase intentions and behavior which has a positive impact on the organization's profit as well as future revenue(Tu, et al. 2013; Woodruff, et al. 1983). Customer satisfaction is the assessment of a particular after-choice purchase on a product that has been properly examined(Bastos and Gallego 2008). Customer satisfaction is achieved when the value obtained is equivalent to the perceived quality of the service in proportion to the customer's acquisition expenses and any transaction fee. Customers' impression of the value they received from a transaction or connection is known as customer satisfaction (Hallowell 1996).

One of a company's strengths is its loyal customers. Many businesses are unaware that fostering customer loyalty begins at various points, from identifying possible clients to developing devoted customers who will benefit the business(Hurriyati 2005).It has been proved that that a well-implemented loyalty package will be able to appeal, retain, and manage consumers(Magat ef and Tomalieh 2015). When a consumer is loyal to a company, they are further expected to purchase its goods or services than those of its competitors(Singh and Khan 2012). According to the unit of decision making, loyalty is the state in which a person makes regular purchases. Four traits of loyalty has been identified which are: repurchasing frequently, purchasing goods or services from the same supplier, referring or endorsing others, and resisting pressure from rivals to switch(Griffin and Broniarczyk 2005). Any businesses capacity to offer superior quality products and services that generate corporate value and foster client loyalty and pleasure is essential to its success(Makanyeza and Mumiriki 2016).

Because of the severe rivalry organizations have recognized that keeping customers is important to success. Organizations have also learned that it's easy to keep happy customers. Accordingly, the foundation of any organization's success is customer happiness (Oliver 1999). One crucial factor that influences a customer's intention to buy is their level of satisfaction(Ramachandran and Chidambaram 2012). When it comes to its product, the company consistently aims to satisfy customers' expectations. Fulfilling the expectations of the client makes them happy and fosters their loyalty(Lau, et al. 2013). It has been determined that the most crucial element for complete success in business was customer happiness(Muyeed 2012). The emotional bond between a business and its clients is known as customer loyalty. It demonstrates the attitude of customers and their propensity to make repeat purchases of a company's goods as a result of their satisfying interactions with the company's services. The company can improve customer retention and cut marketing expenses if it implements a customer loyalty plan(Stan, et al. 2013).

Research Objectives

The main objective of the study is to:

- 1-Define the concepts of product quality, customer satisfaction and customer loyalty.
- 2-To investigate the role of product quality in customer satisfaction optimization.
- 3-To investigate the role of customer satisfaction in customer loyalty optimization.
- 4-To investigate the role of product quality in customer loyalty optimization.
- 5-To investigate the mediating role of customer satisfaction between product quality and customer loyalty.

Problem Statement

Customers are strategic asset for any organization. Due to globalization there is a lot of competition among companies to attract and retain customers. To attract new customers there is a need of continuous advertisement which increases the cost of business and reduces the profitability. On other hand a lot of existing customers switch to competitors because the product does not fulfil their requirements. The quality of product is a major complain of switching customers. Due to poor quality customers are not satisfied and don't repeat their purchase experience. A dissatisfied customer also communicates his negative experience with others. So poor quality leads to customer dissatisfaction, disloyal customer and ultimately organization's overall poor performance.

Literature Review and Conceptual Framework

Product Quality and Customer Satisfaction

Product quality is defined as the degree to which goods can satisfy the needs and preferences of consumers(Smith and Wright 2004; Suchánek and Králová 2015). Enhancements in product quality inherently result in consumer happiness, which in turn influences repurchase intentions and increases sales(Flynn, et al. 1994). Purchase intention is influenced by the quality of the products that can satisfy customers' requirements and expectations(Bei and Chiao 2001). Research demonstrated that the correlation between quality of a product and pricing may be leveraged to boost customer happiness and organizational profitability. Consumer view of quality of a product and customer value have a substantial effect on purchase intention and consumer satisfaction (Ehsani and Ehsani 2015). Better customer value will make customers feel extremely satisfied and encourage customer loyalty when compared to what competitors will offer on the market(Sugiati,

et al. 2013). Offering value to clients is a key component of the business world. This includes both tangible and intangible items, such as packaging, service features, brand names, and performance quality. Therefore, a product's quality is tied to customer satisfaction and value, which has a huge effect on the product (Kotler and Armstrong 2012). Researchers and practitioners have given the conception of quality so much consideration, it has become so overused that it is difficult to define (Rust, et al. 2002). The most of writers agree with description of product quality which says that it is determined by either inherent or extrinsic cues (Zeithaml 1988). Customers rely their opinions on extrinsic signs like price, country of origin, brand, and guarantee on the external quality of a product (Teas and Agarwal 2000). The sum of a product's attributes that have the potential to meet customer expectations is referred to as its dimensions of quality. Customers will be extremely satisfied and believe that a product is of superior quality and acceptable if it fulfills their expectations (Chavan 2003). To support product positioning, the company must decide on a quality level. There are two aspects of product quality: the level of consistency in the product's construction. This quality level describes how well the product fulfills its intended purpose, enabling the production of a superior end product that the company has to maintain (Naini, et al. 2022). Customer satisfaction may be impacted by product quality if it is consistent and undamaged (Gaspersz 2001).

Consumers are any buyers who consistently consume the firm's items for their own individual needs (Daryanto 2014). Customer satisfaction can be effected by quality of a product if it is stable and safe (Weenas 2013). The elements that can affect customer satisfaction are high-quality goods and services. Meeting customer demands and wants while accurately delivering services while balancing their expectations is what is meant by service quality (Tjiptono 2014). Customers' satisfaction and customer loyalty to the business are certainly effected by the activities made by companies to address customer worries and improve their offerings. An unsuccessful attempt at service improvement exacerbates the impact of the original failure by having a second unfavorable effect on the customers, whereas a successful improvement enhances customer satisfaction, intention to visit or repurchase, and intention to speak nice things (Heung and Lam 2003). Four methods have been identified by (Tjiptono 2020) to assess customer satisfaction explained as:

1- All customer-focused businesses must give their clients the chance to voice their thoughts, complaints, criticisms, and suggestions, as well as easy and convenient access to do so. The utilized media may be found in the type of comment boxes positioned in key areas suggestion special toll-free telephone lines, and others.

2- Using a number of ghost shoppers to pose as competitors and prospective buyers of the business's goods. They are expected to use the company's goods and services and communicate with service provider employees. Ghost shoppers are typically asked to closely observe and evaluate how the company's competitors fulfill specific customer requests, respond to customer inquiries, and handle any complaints. Based on this experience, they are then asked to report their findings regarding the advantages and disadvantages of the company's and competitors' products.

3- The business makes every effort to get in touch with clients who have stopped purchasing from or switched suppliers so they can learn why this has occurred and implement additional improvement policies. The challenge with this approach is finding and getting in touch with past clients who are willing to offer feedback and assess performance business.

4- The majority of research on customer satisfaction is done through surveys, which can be sent by mail, phone, email, online, or in-person interviews. By using surveys, the business will receive direct comments and input from its clients and create the favorable impression that it values their opinions.

Following the purchase of a good or service, customers will assess whether or not it meets their expectations. A satisfied customer is one who receives goods and services that exceed expectations. On the other hand, the customer will feel less or not happy if the goods and services do not meet their expectations. It has been shown that customer satisfaction is closely related to the evaluation's findings after customers make a purchase (Mahsyar and Surapati 2020). Consumers record their observations about how well products and services operate, compare them to their expectations or standards, and then use that comparison to determine how satisfied they are. When customers make purchases that lead to the realization of their wants and expectations, they will feel satisfied (Lovelock and Wirtz 2007).

The customer will not be satisfied if the performance is significantly less than what was anticipated. On the other hand if the performance lives up to the customer's expectations, they will be satisfied. Customers will be extremely happy if the performance meets or beyond their expectations. The experience of making a purchase, the experience of friends, the experience of the market, and what rivals may offer all influence expectations (Mahsyar and Surapati 2020). Consumer satisfaction is determined by measuring the total consuming experience and evaluating products and services based on consumer experiences (Joewono and Kubota 2007). Customer loyalty and corporate performance are significantly influenced by customer satisfaction (Oliver 1997). Customer satisfaction is determined by how well the product is considered to function in comparison to the buyer's expectations (Armstrong, et al. 2018). Good product quality can boost customer happiness in addition to having an impact on loyalty. A product's capacity to fulfill its intended purposes, reliability, durability, ease of use, and product improvement indicates that the greater the product's quality, the more satisfied customers will be with its use (Esti Susanti 2014; Ishaq, et al. 2014). On the basis of literature we can formulate hypothesis H1: Superior product quality significantly optimizes the customer satisfaction.

Product Quality and Customer Loyalty

One of the aspects of practically all service and goods that clients want the most is quality. Customers can be drawn in and kept loyal for a long time by offering high and unique quality (Urban 2009). The frequency with which a customer selects the same goods, services, or company is known as loyalty (Zeithaml, et al. 1996). Loyalty includes the approach of selecting the same product or service provider, renewing the contract, and making future purchases of the business product or service (Selnes 1993). Loyalty of a customer is the tendency of consumers to return grounded on their prior experiences and expectations for the upcoming. Consumers are attracted to businesses that successfully manage client loyalty (Bell and Bell 2003). Customer loyalty is defined as a devotion to a product or company (Villas-Boas 2004). Loyalty of a customer is assessed by how satisfied a buyer is with the firm's products, how frequently they make purchases, how they establish a long-lasting relationship based on trust, and how they advocate for the company and its products in their community (Arslan 2020). In order to build client loyalty it has been emphasized the significance of perceived service quality, contentment, and trust (Chiou and Droge 2006).

It has been considered that thinking of customer contentment, perceived value, and the expense of shifting to a rival as the essential mechanisms of creating a loyal consumer base (Lam, et al. 2004). Increasing the line of product and enhancing quality of service only don't seem to be enough to keep consumers. It costs further to gain new clients than it does to retain existing ones. On the other hand, it is evident that prosperous companies prioritize customer interactions and work to foster client loyalty in order to obtain a competitive edge by setting themselves apart from rivals. Companies usually use a collection of strategies for this reason in order to fulfill the needs, wants, and desires of their clients and enhance customer satisfaction and service quality (Alabay 2012). As a result, one measure of a company's present and future success is client loyalty. Customer loyalty gives firms long-term financial benefits by stimulating current relationships and reducing the expense of bringing on new customers. One of the most crucial tasks that companies want to accomplish is customer loyalty. In addition to providing businesses with a tangible source of revenue, loyal consumers can influence those in their immediate vicinity by offering incentives and advice, which lowers the cost of acquiring new clients. Building customer loyalty thereby provides a substantial competitive advantage, safeguards against customer attrition, secures revenue streams, and facilitates the acquisition of new customers (Arslan 2020). Consumers do not want to deal with aggressive sales or unstated expenses, and they want to trust the company with which they share values and know that their personnel care about them (Geller 2002). Quality influences consumer satisfaction, which in turn affects customer loyalty (Shamsudin, et al. 2019). Customer satisfaction is positively impacted by both price and quality; if products are of higher quality, customers will be more satisfied; conversely, if prices are in line with what customers want, customers will be more satisfied (Abdullah, et al. 2018).

Because it is extra costly to secure new consumers than it is to maintain present ones, loyal clients are very important to businesses (Kumar 2017). According to earlier studies, client loyalty is significantly impacted by product quality. According to another study, consumer loyalty is significantly impacted by product quality. The greater the product quality supplied to clients, the more devoted they will be to those products (Anggraeni, et al. 2016; Kurnia and Besra 2020). According to research on consumer loyalty was positively and considerably effected by quality of a product (Hsin Chang and Wang 2011). However a different study on product quality revealed that consumer loyalty was negatively impacted by product quality (Esti Susanti 2014). On the basis of literature we can formulate hypothesis H2: Superior product quality optimizes the customer loyalty.

Customer Satisfaction and Customer Loyalty

Consumer satisfaction measures how satisfied customers are with the goods and services that a company offers (Iddrisu, et al. 2015). A person's view or attitude about the kind of service or good they received in relation to what they had expected is known as customer satisfaction (Tahanisaz 2020). Customer satisfaction is the outcome of the subjective assessment process in choosing the alternative or more than the anticipation (Bloemer, et al. 1998). Satisfaction is an emotive or cognitive post-purchase orientation that centers on assessing the performance of the product. The goods and services offered by retailer have a favorable impact on consumer satisfaction (Swan and Oliver 1985). Essentially the goal of each organization is to keep customers happy so they will keep doing business with a company, which will boost profits and make the company viable in its industry (Nunkoo, et al. 2020). Because today's markets are so competitive, businesses place a great value on customer satisfaction since it is known to increase client loyalty and retention. By

doing this, businesses may increase earnings and keep their competitive edge in their industry .In order to encourage customers to make repeat purchases and to encourage others to do the same, businesses want to see high levels of customer satisfaction and happiness(Famiyeh, et al. 2018). Customer pleasure is one way to estimate consumer loyalty, even though it is not the organization's ultimate purpose(Hensher 2014).Customer satisfaction is one's evaluation of the product or service's performance in relation to their expectations (Schiffman and Kanuk 2005). It has been noted that the primary advantage of happy consumers is that they generate favorable and constructive word-of-mouth regarding the business, its goods, and services(Abdul Rehman 2012; Alzoubi 2019). Customer pleasure would enhance both the company's and the brand's reputation(Phi, et al. 2018). A high number of happy clients should boost profitability by boosting sales and have an impact on the company's overall expansion(Yallapragada 2017). Customer satisfaction is based on how well the business develops its products and services, as well as how well it meets the expectations of its customers. There are several ways to gauge consumer satisfaction. One way to do this is to compare the cost and benefit to the customer's expectations(Mouri 2005). Another way to measure consumer satisfaction is to look at the customer life cycle connection (Spath and Fähnrich 2007).The extent to which a consumer displays recurring business from a facility provider, has a propensity or temperament toward a positive attitude toward service providers, and only considers employing this service supplier when necessary is called loyalty(Saputra and Djumarno 2021).

Satisfied clients may tell others about the company and/or its offerings. If they are unhappy, they can keep prospective clients away from the company by telling others about their grievances and criticisms when they are moving to rivals. Consequently, the degree of consumer satisfaction influences the opinions of non-consumers and can boost the company's market part. Consequently, higher customer satisfaction raises sales, reduces expenses, and boosts profitability. Strong customer-business ties shield the company from elements that could lead to unhappy customers. Because they have faith in and tolerance for the company, happy customers can make up for any inconvenience and continue to be loyal to it(Yeung and Ennew 2000). Meeting client expectations is crucial to raising customer satisfaction. The desire to reap the benefits is the primary driver of customer demand for products and services. Customers can express their displeasure in a number of ways if they believe the products and services they purchase are not meeting their needs. Verbally expressing displeasure, avoiding that establishment again, protesting to the establishment, submitting an application to corporate consumer protection units, or favoring the same establishment are some examples. Based on customer concerns, businesses either alter the product, refund the money, or offer an apology. However, unless customers desire to give feedback, it can occasionally be challenging to know what they expect. Customer feedback is dominated by customer complaints. In this sense, the most significant and valuable source of feedback to raise customer satisfaction should be viewed as complaints(Heung and Lam 2003).

Customers are becoming more aware and are assessing the company's benefits and suitability, which raises their expectations for trust. Regardless of the size or order of the firm, there is a departure from it when clients start to distrust it. Customers are additional likely to make duplicate purchases from the company and pay greater prices for its goods when customer happiness is converted into loyalty. Additionally, they tell others about the business. As a result, it provides the business with new, affordable clients(Fečíková 2004).The reason that customers visit the business more frequently and with greater satisfaction is due to customer satisfaction, a decrease in

customer complaints, and efficient complaint handling(Lapr  and Tsikriktsis 2006). Businesses' primary objective is to make sure that consumers are happy with the products they test. Nevertheless, even while companies strive hard to satisfy their clients, complaints may arise. In this instance, maintaining customer pleasure and appropriately handling the concerns are equally crucial. It was found that almost 96% of unhappy clients choose to depart the company in other ways rather than complaining(Kim, et al. 2007). The consumer who has complained is the one who hasn't left the company yet, and he will make a decision about leaving based on how his complaint is resolved. There is a commercial potential here. If the company makes good use of this chance and its customers are satisfied, it will be able to win again. The importance of resolving the customer's complaint increases with the importance of the goods and services being purchased(Arslan 2020).

Businesses employ marketing methods in part to cultivate client loyalty. The practice of customers who regularly buy a product and form a relationship with a particular business is known as loyalty (Musanto 2004).Loyalty is the customers' dedication to a specific product, merchant or seller is demonstrated by their favorable response during recurrence purchase(Mittal, et al. 1999). Building strong loyalty behavior is the company's primary goal when developing and cultivating a relationship with its customers(Sambo, et al. 2022).Four categories comprise the dimensions of customer loyalty which can be described as:

- 1- When customers interact with the business, they will make frequent purchases and become satisfied with the process. Additionally, this will assist them in developing a friendly and intimate relationship with the client and learning about their preferences.
- 2- Customers are comfortable using the products, which makes it difficult for them to quickly move to other competitors' offerings since they trust the business and its name. As a result, they deny other products recognition.
- 3- In addition to advocating the company's goods and brands to others, customers will also promote the product to others, which will make them an excellent spokesman for other customers and a larger value to the business.
- 4-In Purchase interline goods and services case, buyers may add additional items from the acquired product since they are buying accessories for their products in addition to one category of goods after another (Griffin 2014).

Every company in the world depends on its customers; as a result, it is vital to attend to their needs because their demands constantly affect its product and profit. Customer satisfaction is now a highly important factor for a company's product since it gauges how well the product meets the expectations of the customer. Since happier customers with pricing and quality translate into more items and more profit, customer happiness will actually have an impact on the business and the product as well. According to certain studies, 90% of dissatisfied consumers will never repurchase a product from the business, proving that ensuring customer happiness is an effective strategy for lowering dissatisfied customers and boosting revenue. A business cannot expect people to care about its products if it does not care about their satisfaction(Demir, et al. 2021; Top and Ali 2021). Inquiry has revealed a favorable relationship between Consumer satisfaction and profit, loyalty,

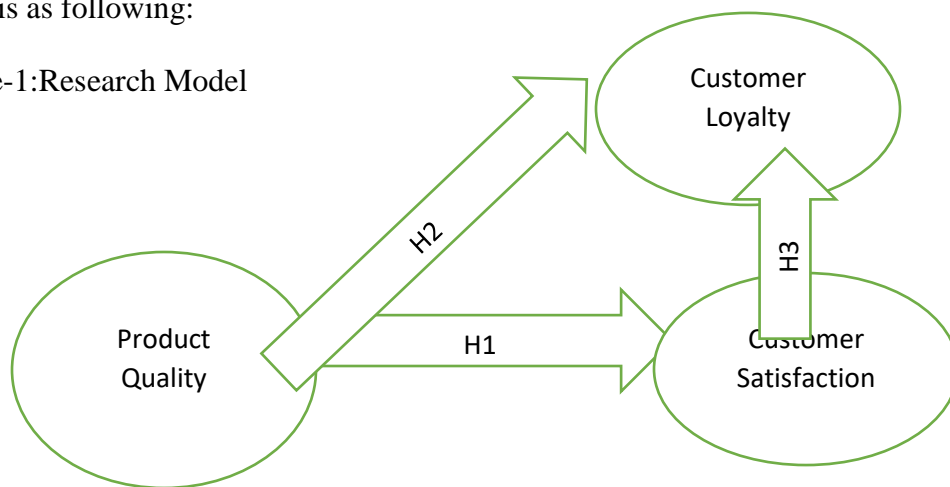
decreased price sensitivity, and cross-buying activity(Bloemer and Odekerken-Schröder 2002). Numerous studies have demonstrate that satisfied consumers do defect (Dimitriades 2006). For instance, even when consumers claim to be satisfied, they continue to buy from other sources (Jones 1996). A tactic that benefits both businesses and customers is customer loyalty(Reichheld and Detrick 2003). The company's main goal is to satisfy consumer need and want so that they are happy with the product they are purchasing(Ngo and Nguyen 2016). Several earlier research demonstrated a strong and significant relationship between customer satisfaction and customer loyalty, which states that consumers will be more devoted to a business if they are happier with its goods or services (Chang and Fong 2010; Tsai, et al. 2010). Consequently, another study found that consumer loyalty was significantly impacted negatively by customer satisfaction. This study concentrated more on another element that influenced customer loyalty, such as consumer confidence in a company's or product's reputation(Faullant, et al. 2008).On the basis of literature hypothesis can be formulated H3:Customer satisfaction optimizes the customer loyalty

H4: Customer satisfaction mediates the effect of product quality on customer loyalty.

Conceptual Model

As previously stated the different findings from earlier researchers were seen as a research gap. This study focused on how quality of product improves consumer satisfaction and enhance consumer loyalty. It did this by using customer satisfaction to bridge the gap between product quality and customer loyalty. This was done to address the research problem regarding customer loyalty and satisfaction and to close the gap in previous research. The conceptual basis for this study is as following:

Figure-1:Research Model



Research Method

Sample and Data Collection

The purpose of the research is to find out the correlation between three variables product quality, customer satisfaction and customer loyalty. Quantitative research methodology is used in this study. Sampling is a process of selecting a subdivision of the population in any research. Sampling assists the investigators in selecting more representative samples and inferring the investigation outcomes. Suitable sampling method is crucial to carrying out extraordinary-quality inquiry(Shorten and Moorley 2014). Convenience sampling is the technique of gathering data from

a investigation population that the investigator can easily access(Rahi 2017). Convenience sampling is used in this study to collect the required data.

Data was collected from respondents by using a structured questionnaire adopted from(Sambo, et al. 2022).Product quality and customer satisfaction was evaluated by using 10 questions for each while customer loyalty was evaluated by using 5 questions. So total scale items used in this study are 25. Total 212 responses were received.

Data Analysis and Results

Data was analyzed by using SPSS. Reliability, Correlation, ANOVA and Regression analysis are used in this study.

Sample Gender Profile

Table-1 describes respondent gender profile. Total 212 responses received.140 respondents are male, 66% of respondents while 72 respondents are female,34% of respondents.

Table-1 Respondent Gender Profile

Gender	Total	Percentage
Male	140	66
Female	72	34
Total	212	100

Reliability Analysis

Table-2 depicts reliability statistics results. Reliability of a scale depicts that scale is measuring the concept precisely. Cronbach's alpha measures the internal consistency or reliability of a number of items, measurements, or ratings. In other words, it evaluates the instrumentation, subject ratings, or the reliability of a questionnaire's responses (or domain), demonstrating the stability of the instruments. Cronbach (Cronbach 1951) created alpha, which was first applied to evaluate a psychometric instrument's reliability. Cronbach's alpha has a range of 0 to 1, where greater values indicate that the items measure the same dimension. On the other hand, all or some of the items are not measuring the same dimension if the Cronbach's alpha value is low (close to 0)(Gliem and Gliem 2003; Leontitsis and Pagge 2007).Total scale Cronbach's alpha value is 0.867, Product quality scale Cronbach's alpha value is 0.877, Customer satisfaction scale Cronbach's alpha value is 0.891 and Customer loyalty Cronbach's alpha value is 0.823.So overall scale and individual scales are reliable(Gliem and Gliem 2003; Leontitsis and Pagge 2007).

Table-2 Reliability Statistics

Scale	Chronbac's Alpha	No. of Items
Total Scale	0.867	25
Product Quality	0.877	10
Customer Satisfaction	0.891	10
Customer Loyalty	0.823	5

Correlation

The strength of the linear link between two variables is indicated by the correlation coefficient, or r. Theoretically, the correlation coefficient can take on any value between + 1 and -1, including

the final values of + 1 or -1(Taylor 1990). When r is positive, there is a positive association. When the value of one variable rises in response with the value of another, this is known as a positive correlation. An inverse relationship is indicated by a negative value of r, which means that while the value of one variable increases, the value of the other variable decreases. On the other hand, the absence of a relationship between the two variables is indicated when r equals 0. The different characteristics of the correlation between the two variables are illustrated by the values of r, which range from 0 to 1. A weak correlation is indicated if r is less than 0.33; a significant link is indicated if r is between 0.34 and 0.66; if r is from 0.67 to 0.99, it suggests a strong relationship(Somekh and Lewin 2005).

Table-1 shows correlation between different variables. There is a strong correlation between quality of a product and consumer satisfaction, Customer satisfaction and customer loyalty while there is also a significant correlation between quality of a product and consumer loyalty.

Table-3 Pearson Correlation

Construct	Product Quality	Customer Satisfaction	Customer Loyalty
Product Quality	1		
Customer Satisfaction	0.783	1	
Customer Loyalty	0.596	0.726	1

Correlation is significant at the 0.01 level (2-tailed).

Regression

Regression analysis was used to the analyze Model fit, ANOVA and Coefficients.

Model Summary

Table-4 Model Summary

Independent Variable	Dependent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate
Product Quality	Customer Satisfaction	0.78	0.61	0.61	3.770
Customer Satisfaction	Customer Loyalty	0.73	0.53	0.52	2.149
Product Quality	Customer Loyalty	0.59	0.35	0.35	2.510

Table-4 describes model summary. The value of R describes the link between independent and dependent variable. The coefficient of determination, or R square, can be written as the proportion of variance that the model explains. R square is often computed to assess a parametric linear model's quality of fit. R² is commonly understood to be the percentage or proportion of the dependent variable's variation that can be predicted or explained by the independent variables (Morden, et al. 2021; Rousson and Goşoniu 2007; Scheinker, et al. 2019).The value of R between product quality (Independent variable) and customer satisfaction (Dependent variable) is 0.78 which depicts a strong correlation. The value of R Square is 0.61 which means product quality (I.V.) explains 61% variation in customer satisfaction (D.V.).The value of R between customer satisfaction and customer loyalty is 0.73 which describes a high correlation while the value of R Square is 0.53 which depicts that customer satisfaction (I.V.) explains 53 % variance in customer

loyalty (D.V.). The value of R between product quality and customer loyalty is 0.59 which also depicts a significant correlation. R Square value is 0.35 which means product quality (I.V.) explains only 35% variation in customer loyalty (D.V.). All the R Square values depict that model explains all the variations caused by independent variables in dependent variables. So model is good fit to explain the required variables.

ANOVA Test

Table-5 ANOVA Test

Independent Variable	Dependent Variable	Model	Sum of Squares	df	Mean Square	F	Sig.
Product Quality	Customer Satisfaction	Regression	4718.433	1	4718.433 14.215	331.937	0.00
		Residual	2985.114	210			
		Total	7703.547	211			
Product Quality	Customer Loyalty	Regression	728.270	1	728.270 6.302	115.559	0.00
		Residual	1323.447	210			
		Total	2051.717	211			
Customer Satisfaction	Customer Loyalty	Regression	1081.586	1	1081.586 4.620	234.126	0.00
		Residual	970.131	210			
		Total	2051.717	211			

The Table-5 describes ANOVA Test. All the values mentioned are significant so the hypothesis 1 hypothesis 2 and hypothesis 3 are accepted.

Direct and Indirect Effects

Regression analysis is conducted to identify direct and indirect effects. SPSS Andrew Hayes' PROCESS macro, a statistical tool for regression analysis is used to identify indirect effect (Hayes 2018). The Table-6 describes direct and indirect effects. Simple linear regression was run to calculate direct effects. Table depicts that quality of product has significant direct influence on consumer satisfaction. Standardized Coefficients Beta value describes that 1 unit change in product quality will cause a 0.78 unit change in consumer satisfaction. Product quality has a direct significant impact on customer loyalty and 1 unit change in product quality will cause a 0.59 unit change in customer loyalty. Customer Satisfaction has also a significant impact on customer loyalty and 1 unit change in customer satisfaction will cause a 0.73 unit change in customer loyalty. The mediating/indirect effect describes that customer satisfaction mediates the relation between product quality and customer loyalty. The indirect effect between product quality and customer loyalty using customer satisfaction as mediator is 0.52 which shows a moderate level mediation. Hence hypothesis 1, hypothesis 2, hypothesis 3 and hypothesis 4 are proved.

Table-6 Direct and Indirect Effects

Independent Variable	Dependent Variable	Direct Effect Standardized Coefficients Beta	Indirect Effect Standardized Coefficients Beta
Product Quality	Customer Satisfaction	0.78	
Product Quality	Customer Loyalty	0.59	.5247
Customer Satisfaction	Customer Loyalty	0.73	

Discussion

The purpose of the research was to discover the impact of product quality on consumer satisfaction, product quality on consumer loyalty, customer satisfaction on customer loyalty and to identify how customer satisfaction mediates between product quality and customer loyalty. Results of our study depicts that superior product quality leads to customer satisfaction. Superior product quality leads to customer loyalty but effect is not strong which means some other factors may cause to increase customer loyalty. Customer satisfaction also leads to strong customer loyalty. The results also depict that product quality has a moderate indirect effect on customer loyalty considering the mediating effect of customer satisfaction.

The results of current study are in accordance with previous studies. Previous research indicates that customer satisfaction and customer loyalty are positively correlated and high-quality goods and customer service both contribute to consumer satisfaction(Jahanshahi, et al. 2011).In previous research the relationships among quality, customer satisfaction, and loyalty are among the most often studied subjects(Chai, et al. 2009; Pilkington and Chai 2008). (Pilkington and Chai 2008) studied that customers who have used higher-quality items are more likely to be loyal. Research conducted by (Chai, et al. 2009) demonstrates that how crucial high-quality goods and services are to boosting client satisfaction and loyalty(Bastos and Gallego 2008). The commonality of these research in terms of unidentified client demands might be pursued. Customers know to whom their perception is dedicated in an environment where businesses do not rely on third parties to service them, and it is reasonable to assume that perceived quality, customer satisfaction, and loyalty are directly related. Research also identified that although it may be simple to note that happy customers are more likely to remain loyal to a brand, many happy customers are not brand loyal. Therefore, it is crucial and difficult for a business to focus on both loyalty and satisfaction at the same time (Jahanshahi, et al. 2011).

Research indicates that there is a significant and positive correlation between increased customer loyalty and customer satisfaction (Bowen and Chen 2001; Silvestro and Low 2006; Sivadas and Baker-Prewitt 2000). According to (Kotler, et al. 2010)customers would prefer products that have the best quality, performance, and functionality; this will rely on the product concept. Research conducted depicts that acceptable client loyalty is strongly impacted by customer satisfaction(Reza, et al. 2019). Customer satisfaction and loyalty are tightly linked; the more happy customers are with their needs or expectations compared to reality, the more likely they are to repurchase the product and become loyal customers(Rachmawati 2014). When clients are happy, they will remain loyal to the business, and satisfied customers can serve as the foundation for achieving loyal customers(Sembiring, et al. 2014). Research conducted by (Razak, et al. 2016)states that every business strives to provide high-quality products so that it can compete with other businesses. It should be remembered that customers' opinions, not the company's, determine the quality of a product. Further (Syafarudin 2021)stated that customer satisfaction can manifest as either happiness or disappointment with the product's performance as anticipated; the business then anticipates customer satisfaction in order to build a cordial relationship that will serve as the foundation for repeat business and loyalty(De Ruyter, et al. 1998).(Waari 2018)stated that loyalty and satisfaction are related. Study conducted by (Sitanggang, et al. 2019)proved that product quality and customer satisfaction are closely related since they can both benefit the business. A consistent level of quality in a product or service can help a business succeed by increasing

customer satisfaction. Good customer loyalty will follow from satisfied customers who are satisfied with the quality of the products (Ali, et al. 2020; Rua, et al. 2020).

Conclusion and Suggestions

The results of the study shows that to satisfy and retain its customers a company should produce and provide superior quality products based on customer expectations. This indicates that a product's quality can give customers confidence because modern consumers want high-quality products. If customers are satisfied it will create a favorable impression for customer loyalty because satisfied customers are more likely to make another purchase. The business should always maintain the quality of the goods and services it offers, since doing so will help it survive and continue to work toward creating loyal customers while preserving its competitive edge.

Research Limitations

The limitations of the study is that there is a need to study factors other than product quality which can contribute in customer satisfaction and customer loyalty.

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