

CHAPTER I

INTRODUCTION

1.1 Research Background

Most people take advantage of the excess funds they have by making an investment. The type of investment to be chosen requires consideration to decide the right investment for the excess funds they have. This makes the problem related to the decisions made by consumers to make the right investment. Various choices of investment types, gold was chosen as one of the best investment product choices in the community. According to Kusnandar (2010) gold was chosen as one of the choices for the right purchase product for consumers in the context of investment. Gold as a precious metal is certainly a special attraction for the community to beautify themselves for its users, especially for women and gold can be used as a short-term or long-term investment tool.

Gold was chosen for eleven reasons, apart from being unaffected by inflation zero inflation, it has other advantages including: protection, easy to melt, affordable to all, portable, durable, tangible asset, privacy, low risk, tax and admin free, beauty and pride (Anggraini, 2019). There are two kinds of gold, namely in the form of precious metal gold and gold jewelry. Gold jewelry such as necklaces, bracelets, rings, piercings, earrings, and pendants. Meanwhile, the precious metal of gold is only in the form of bars, coins, and pieces with a certificate attached to the item. Therefore, gold is intended for people to invest and do business with speculation to bring profit.

On the other hand, gold as a product for investment purposes, especially women will certainly prefer gold jewelry because in addition to functioning, it can also be used as an accessory and also as an investment facility. The assumption is that they buy gold jewelry because they are safe from price fluctuations. In a cultural context they buy for investment and save money in addition to saving in the bank. Banks are considered to be in addition to being troublesome, there are also administrative costs, in contrast to gold shops which are usually open every day other than national holidays and without administrative fees.

Based on the results of the gold price chart analysis in 2023 issued by goldprice.org, the price of gold in Indonesian Rupiah per gram in 2019 amounted to IDR600,000 increased in 2023 by IDR940,000. Setyawan (2010) in his research explains that it is proven that public demand for investment is already in the form of gold even though the price continues to change, this does not shrink consumers in purchasing of gold products.



Figure 1.1 Gold Price Charts per Grams

Source: Goldprice.org. (2023)

The habit of Indonesian consumers to purchase gold jewelry as a life style drove the growth of gold jewelry increased in 2019 – 2023. Gold jewelry is predicted to continue to increase in every year due to market demand showing an upward trend. Rompas (2015) in her research result there are several categorization woman opinion that makes the customers choose to make gold jewelry as their investment such as value, lifestyle, and decision making. Therefore, the woman looking for more information about the right way to invest in gold. With gold jewelry can give consumer profit when bought at a low price and then sell it when the price of gold increased.

The more gold jewelry businessmen, the competition will be tighter especially in Demak regency which has a lot of competition gold stores. In Demak, the gold stores location is in the traditional market Mranggen and Karangawen. Based on the observations by the author, there are approximately 21 gold store in Demak regency. Karangawen is a sub-district in Demak Regency, Central Java, Indonesia where the gold store is located on the Semarang-Purwodadi road.

The author in this research took the population of gold store customers in Karangawen and the object of research at the Sinar Mas Gold Jewelry Store. Sinar Mas Gold Jewelry Store is a gold store that offers buying and selling gold jewelry products which are available every day and in various variants.

Sinar Mas Gold Jewelry Store has been established since 2000, founded by Hery Hanwari and his wife Indrayani Ngizom who are also owners of the Sinar Mas Gold Jewelry Store. In Demak, the consumer tends to prefer the gold jewelry over the silver, although silver is cheaper than gold. There are many disadvantages of

silver does not tend to fare well when held for a long time. While both gold and silver are precious metals, the two of them behave quite differently from one another, the consumer must understand the differences between gold and silver.

Many entrepreneurs are also thinking about doing business in the field gold, for example sell gold jewelry, because they realize it the importance of gold in our life.

There are many competitors in business gold jewelry because of the dynamics of promising business opportunities that will certainly make business competition in the field of gold increasingly competitive.

Intense competition in the gold store, requires companies to provide quality services and competitive prices, guarantee satisfaction of both the process and the end of post purchase to customers to meet the wishes and expectations of Sinar Mas Gold Jewelry Store. Here consumers exist, for the products offered by the company, namely gold jewelry product. According to Kotler & Keller (2009) the definition of a product is anything that can be offered to a market to satisfy a desire or needs, including physical goods, services, etc. The role of consumers is very important to be used as a benchmark by a company where consumers and companies are interconnected because a company produces certain products to be conveyed to consumers to be purchased by consumers with the aim of meeting consumer needs and in accordance with consumer desires.

Gold products have their own satisfaction in consuming them. Especially jewelry, the higher grade of gold jewelry, the more expensive it is usually more shiny and more durable it is to change. Therefore it means that product quality plays a role in influencing consumer satisfaction. According Kotler & Armstrong (2008)

product quality is a potential strategic weapon to beat competitors. So only companies with the best product quality will grow rapidly, and in the long run these companies will be more successful than other companies. Product quality is an understanding that the product offered by the seller has more selling value than competing products. Therefore a company tries to focus on product quality and compare it with products offered by competing companies.

Quality must be measured from the consumer's point of view. So in managing the quality of a product must be in accordance with the intended use by consumers. Then good product quality can make customer satisfied, so that consumers can be interested in a product produced by a company that will encourage consumers to make purchases of these products with the quality offered. The quality of the appropriate products offered will have a positive impact on customer satisfaction. Amalina et al., (2019) in her results of the study found a positive influence between the product quality of gold to customer satisfaction. Therefore, the extent to which consumer expectations are met raises a high level of positive customer satisfaction so as to create a positive relationship between the quality of product and customer satisfaction.

Customer satisfaction is influenced by many factors, one of which is service quality. The company should not only concentrate on improving products quality and design, they should also attach special importance to enhance service quality in their stores. Quality is a dynamic condition that affects products, services, people, processes and the environment that meet or exceed expectations (Tjiptono, 2007). Therefore based on this definition of service quality can be interpreted as an effort

to fulfill the needs and desires of consumers and the accuracy of delivery in balancing consumer expectations. The quality of services that are in accordance with the desire, consumer needs will have a positive impact on customer satisfaction, so in previous research by Reza & Sumarwan (2019) the quality of service that positively affects customer satisfaction.

Sinar Mas gold jewelry store not only selling and buying gold transaction, they are also offers service include cleaning, polishing and repair, and also accepts custom request of the customer for example engagement events. According to the owner of the gold store, the purchase of gold jewelry for residents increased by 20-30 percent during the PPKM period in 2021 end year pandemic. Residents admitted, selling the gold jewelry to meet economic needs in the midst of the Covid-19 pandemic (Republica.co.id, 2022). In this case, Sinar Mas gold store business activities are conducting gold buying and selling transactions and gold pawnshop services. From the data of Sinar Mas gold jewelry store, has average selling purchase of gold for IDR 220,000,000 /month this is gross profit reached IDR 48,000,000 /month.

While, in the global gold jewelry demand on Q3 demand benefitted from a pullback in the gold price. India led the recovery with 17% y-o-y growth in demand to 146t – the strongest third quarter since 2018. Demand in China saw more muted growth, up 5% y-o-y as sporadic COVID-related restrictions impaired consumer sentiment.

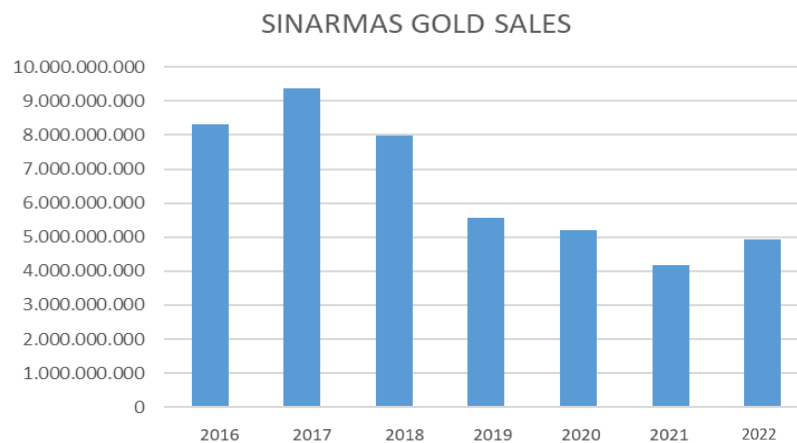
Table 1.1 Global Gold Jewellery Consumption Recovered to Pre-COVID

Tonnes	Q3'21	Q3'22	Y-o-y change	
World total	476.5	523.1	↑	10%
India	125.1	146.2	↑	17%
China, P.R.: Mainland	156.0	163.4	↑	5%

Source: Metals Focus, World Gold Council, 2023

Based on the Table 1.1 Global gold jewellery consumption of 523t improved 10% y-o-y in Q3, and was up 14% compared with the prior quarter. Demand was also healthy on a longer-term comparison, exceeding its five-year quarterly average (501t). Y-t-d demand reached 1,454t, a 2% improvement on the same period in 2021. This signals a continued normalisation of the market to pre-COVID levels of activity, aided by a pullback in the gold price in many markets during the quarter.

Sinar Mas Gold Jewelry Store has made significant decrease seen from its sales data from year to year. This section describes and draws a summary of the decreasing of gold sales of Sinar Mas Gold Jewelry Store from 2016 to 2022.

**Figure 1.2 Sinar Mas Gold Sales 2016 - 2022**

Source: Sales Report of Sinar Mas Gold Jewelry Store, 2023

Referring to the data above, it can be seen from the graph that in 2016 it reached of sales IDR 8,324,000,000, an increase in 2017 reaching IDR 9,369,000,000. In the following year Sinar Mas is fall down of turnover, there are from 2018 until 2021. It decreased in 2018 to IDR 7,981,000,000. In 2019 the turnover decreased to IDR 5,552,000,000. Followed by 2019 and 2020, it decreased to IDR 5,205,000,000 and IDR 4,164,000,000 due to the Covid-19 pandemic. In 2021, the turnover of Sinar Mas gold jewelry store reach IDR 4,934,000,000. After pandemic in 2021 has resulted in a decrease in business revenue and a decrease in sell. Sinar Mas gold jewelry store is no exception to the decline in revenue (Sinar Mas owner, 2023). It can be seen from Sinar Mas Gold Jewelry Store Sales data 2022 in graphic form :

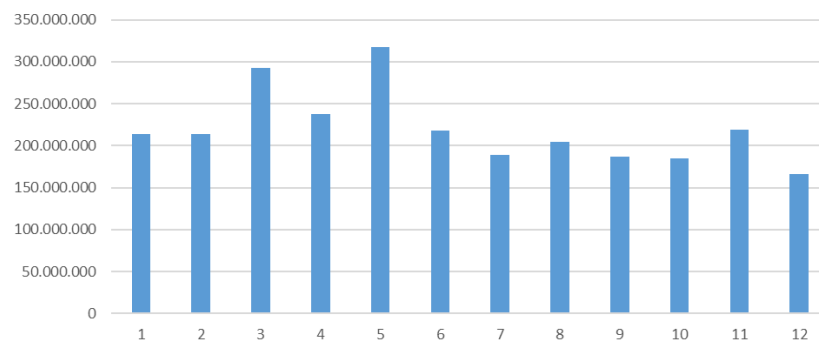


Figure 1.3 Sinar Mas Gold Sales Graph January - December 2022

Source: Sales Report of Sinar Mas Gold Jewelry Store, 2023

Based on the data shown, it can be explained that the number of gold sales on Sinar Mas Gold Jewelry Store for the last 1 year from January to December 2022, the highest was obtained in May where the total gold sales amounting to IDR 317,035,000 it because of the Eid al Fitr usually the traditional market in Karangawen is always crowded so the sales at Sinar Mas increase. However, after

the Eid al Fitr the trend obtained is in the form of an average change that is relatively decreasing from month to month. The most drastic decrease was seen in December 2022, which only reached amounting to IDR 165,983,000 of gold sales.

Customer satisfaction is a measure of how products and the services provided meet or surpass customer expectations (Kotler & Armstrong, 2018). It refers to the final state of a process in which the customers evaluate the perceived benefits obtained from using service (Oliver, 2010). In fact, all organizational production components should be coordinated towards meeting consumer's expectation and desires and as such, organization should leave the old pattern of production because if the customers' desires and expectations are not address by critical improvement on all productions component of the organization, they may switch to that of the company rivals (Razak et al., 2016).

Along with the increasing number of gold store in Karangawen, Sinar Mas Gold Jewelry Store customers has high trust in the services provided, however, the number of sales during the last five years has decreased. The phenomenon of the decline in gold sales for 5 years also occurred because Sinar Mas Gold Jewelry Store had several complaints from 30 respondents such as poor service, facilities inadequate and so on. So that consumers are less satisfied with the services provided by the store. The following is data on complaints from Sinar Mas Gold Jewelry Store consumers who have made purchases at the gold store.

Table 1.2 List of Consumer Complaints Sinar Mas Gold Jewelry Store

Customer by Age	Types of Complaints
17 - 19	Models less up to date especially white gold
	The initial letter pendant is incomplete
	Unique gold models and imports are just a few
20 - 24	Limited items for the new stock
	No waiting room or seating to wait
	New items are stored in deep stock and are not issued in storefronts
25 - 55	The size of the large ring is limited
	Some gold new models are stored and not issued all so have to ask the storesales first
	For 17 carats gold is less choice
	The service is not friendly

Source: Consumer Questionnaire, 2023

This list of consumer complaints was obtained from a preliminary study questionnaire of 30 respondents who had made transactions at Sinar Mas gold jewelry store, with an age range of 17-55 years. This consumer complaint arises because consumers who make purchases in gold stores are less satisfied with the service of Sinar Mas gold jewelry store, where it is mentioned that some consumers state that the new model gold products are not removed from the storefront window but stored by owners and consumers must be active or waiting for the store sales to inform new products. Without a good service, consumers will not be satisfied because consumers have high expectations that must be met.

In this study, the author takes one gold store that has been established during 22 years where the sales growth of Sinar Mas gold jewelry store as a whole has decreased. When compared with the growth graphic from 2016 until 2022, the growth graphic of Sinar Mas gold jewelry is still decreased. This condition is inseparable from the increasing competition in the gold store sector, especially in

Karangawen, with the increasing number of competitors making consumer choices more diverse and a challenge for Sinar Mas gold jewelry store to win the competition.

Customer satisfaction is the basis success of a business, with a satisfied customer base playing an important role in achieving company competitiveness. Phan & Nguyen (2016) states that the elements that affect customer satisfaction include service quality, product quality, and environment. Thus, this study entitled “The Effect of Product Quality and Service Quality on Customer Satisfaction at Sinar Mas Gold Jewelry Store”. The objectives of this study are as follows: 1) Knowing and analyzing the effect of product quality on customer satisfaction at Sinar Mas gold jewelry store. 2) Knowing and analyzing the effect of service quality on customer satisfaction at Sinar Mas gold jewelry store. 3) Knowing and analyzing the effect of product quality and service quality simultaneously significant on customer satisfaction at Sinar Mas Gold Jewelry Store.

1.2 Problem Statement

Based on the previous background, there is a phenomenon where, the sales growth of Sinar Mas gold jewelry store as a whole has decreased from 2016 until 2022, then the researcher formulates the problems to be studied in this study, namely:

1. Does product quality effect customer satisfaction at Sinar Mas gold jewelry store?

2. Does service quality effect customer satisfaction at Sinar Mas gold jewelry store?
3. Does product quality and service quality simultaneously have significant effect on customer satisfaction at Sinar Mas gold jewelry store?

1.3 Research Purpose

The purpose of this research is to determine the analysis the effect of product quality and service quality on customer satisfaction on Sinar Mas gold jewelry store.

1. To analyze the effect of the product quality on customer satisfaction at Sinar Mas gold jewelry store.
2. To analyze the effect of service quality on customer satisfaction at Sinar Mas gold jewelry store.
3. To analyze the effect of product quality and service quality simultaneously significant on customer satisfaction at Sinar Mas gold jewelry store.

1.4 The Benefit of Research

1.4.1 Theoretical Aspects

This research can provide benefits with a good impact on the product quality and service quality of customer satisfaction at Sinar Mas gold jewelry store as well as a reference for further research in the future.

1. Company

The results of this study are expected to provide a reference in order to develop product quality to make it more attractive to increase customer on Sinar Mas gold jewelry store which can indirectly increase the number of customers and turnover at the Sinar Mas gold jewelry store so that it can grow even better. In addition, it is hoped that it can be an evaluation for the Sinar Mas gold jewelry store itself so that it can develop in the current era and can be a direction in increasing the amount of income through product quality and service quality.

2. For Researcher

By conducting this research, it is expected to develop new insights and knowledge, to train systematic thinking skills, about marketing management, especially regarding product quality and service quality towards customer satisfaction at Sinar Mas Gold jewelry stores.

3. Reader

The results of this study can be used as insights in the gold jewelry business regarding pay attention of product quality and service quality towards customer satisfaction at Sinar Mas Gold jewelry stores.

1.5 Theoretical Framework

The level of customer satisfaction relies on the quality of a product. When purchasing, the level of satisfaction felt by customers can be seen how the product quality is able to satisfy its customers so that they become loyal to the product. Therefore, management and all components within the company must really

emphasize handling consumers so that they become satisfied. In determining the level of customer satisfaction Irawan (2004) mentions five critical factors as follow:

1. Product Quality

Customers are satisfied after buying and using the product with good product quality.

2. Price

Usually, low prices are an important source of satisfaction. However, usually the price factor is not a guarantee that a product has good quality.

3. Service Quality

Customers are satisfied if their services are good or in accordance with their expectations from employees or company.

4. Emotional Factor

Satisfaction is not about product quality, but self-esteem or social value that makes customers satisfied with a particular product brand.

5. Costs and Convenience

Customers will be more satisfied if it is relatively easy, convenient and efficient to get products or services.

1.5.1 Marketing

With the globalization today, due to the fact that the development, change and the rivalry in the economical scales of countries have gained an unprecedented speed and content, marketing has gained a new meaning and it has ended with an inevitable final for the changes in the structure of marketing activities for

businesses. These changes can be explained as the desire of businesses not to lose their customers and focusing on gaining new customers thanks to their satisfied and loyal customers. Consumers not only buy the products that make them feel satisfied but prefer to buy emotional experiences with the products that make them feel good. And here the material and non-material values offered by businesses play an important role as a key function to keep their customers. The aim not to lose the customers, but to create customer satisfaction and to focus on sharing customers instead of sharing investments have increased the studies for relational marketing. The transition process, from traditional marketing to the sense of relational marketing aiming primarily at getting in contact with customers, strengthening and developing the relations and keeping its stability, has run up as a result of these studies.

Marketing is complete mainly to increase product demand through image enhancement and market differentiation. The concept of marketing relies on the enterprise of tasks and produces products with maximum efficiency. This is to ensure that consumers can make choices and purchase. The core orientation of this is the desire and expectation of customers for products and services in the market. Companies make business decisions to produce products and services that are most suitable and acceptable to consumers. According to Kotler (2000) marketing is a social process that involves individuals and groups to get their wants and needs by creating and offering products that already have their own values.

Kotler & Armstrong (2012) assume, "Marketing as the process by which companies create value for customers and build strong customer relationships in

order to capture value from customer in return”, means that marketing is a process that creates value for customers and builds strong relationships with consumers so as to create goals that become customer value.

In general, it can be concluded that marketing is all activities carried out by business people in determining strategies, communication processes and conveying value from the process of exchanging goods or services. Marketing aims to find out, identify and understand customer desires so that products and services can be realized according to their needs.

For this reason, Sinar Mas gold jewelry stores require marketing to increase gold sales and company performance. One of the main goals of marketing is to reach target customers more efficiently and effectively. That’s way, marketing is expected to reach consumers more quickly, precisely and widely.

1.5.2 Marketing Mix

Kotler & Keller (2009) define marketing mix as the collection of manageable strategic marketing instruments and involves all the actions that a company can take in order to have an impact on the demand for its offerings. These instruments are referred to as “4Ps”, standing for Product, Price, Promotion and Place (Kotler & Keller, 2012).

1. Product, is everything that can be sell and offer by business people in order to satisfy the wants and needs of consumers.
2. Price, is the selling value of goods in the form of currency that can be exchanged by consumers for a product or service to obtain benefits equal to the sacrifices incurred.

3. Place, is a company activity to provide a product for its target customers includes transportation, location, warehousing and so on.
4. Promotion, is an activity that attracts and conveys the benefits of products so that consumers are interested in purchasing products.

1.5.3 Consumer Behavior

Consumer behavior is something that consumers want in order to make a decision to buy a product or service. According to authors Mowen & Minor (2022) they define it to be a study of consumption units and consumption processes where involved in the type of product, as well as the exchange of information and an idea. During the buying process, the relationship that occurs between consumers and company due to the exchange of information and data, and can also affect the company with each other when the experiencing industry problems and situations.

Based on Lamb et al. (2019) they stated that explaining consumer behavior can be defined as the consumer process in making a decision in carrying out the purchase, consumption and the use of products and services he buys, then making influential factor of a consumer decision in making a purchase.

From the definition of consumer behaviour above, it can be concluded that every process when consumers are making choices, purchasing, and consuming products and services or experiences to meet consumer needs and consumer satisfaction.

Understanding consumer behaviour is essential for business owners who are willing want to increase profits. Understanding how and why consumers make purchasing

decisions is very beneficial for business owners in terms of developing a good marketing strategy and improve their competitiveness in the market.

Many people believe that consumers do not always act or react according to economic conditions. This is due to the large number of choices, as well as that most consumers are selective in buying a product. This means that not all products that are producer based will be recalled or delayed so that customers can buy them. postponed so that customers can buy them. This means that not all products that producer base will be withdrawn or postponed so that consumers want to buy it. Individual factor has a different impact on each consumer. Therefore, the foresight of marketers must be able to identify various factors as an influence on product sales, because the marketing ability of a company will be an opportunity to increase sales.

1.5.4 Customer Satisfaction

Nowadays, customer satisfaction and dissatisfaction something that is very crucial for the company. In addition to being a parameter of the success of a product/service, customer satisfaction can also be a step in improving product or service. Consumers who are able or satisfaction is the purpose of marketing. When consumers satisfied with the products/services they get, they will be more likely to repurchase, as well as by always being satisfied have a high chance of repurchasing, and constantly suggests the product to those closest to them. In addition, it is less likely customers are less likely to turn to competing products. Maintaining customer satisfaction wants to establish a good relationship with consumers. This condition can also maximize the profit value company for the coming period. Conversely, if

the company cannot increase customer satisfaction it is the same as giving a bad experience to consumers because the products that consumers receive were not as expected.

Customer satisfaction is the level of feelings satisfied or dissatisfied after comparing what customer have received and expected. Feelings are an accumulation of customer purchasing and consumption experiences (Listyawati, 2013). Customer satisfaction is one of the key goals of any company. Organizations realize that it is more profitable to keep existing customers than to have to obtain new ones to replace those lost. Theorists in management and marketing discuss the importance of customer satisfaction for the success of a company (Mccoll-Kennedy & Schneider, 2000).

1.5.5 Product Quality

Increased competitiveness encourages companies to place a greater emphasis on product quality. This is due to consumers becoming smarter and criticize products when making purchases and when using them. Providing and offering products with good quality that will satisfy consumers and it is likely that consumers will repurchase and attract other consumers. If a company cannot provide high quality products, customers are not satisfied and try to find another company to fulfill their desired needs.

Kotler & Keller (2016), stated that "product quality is the ability of an item to provide appropriate results or performance even beyond what the customer wants". Product quality is the main focus in the company, and quality is an essential policy

in increasing competitiveness. Products must give satisfaction to consumers exceeding or at least the same as the quality of products from competitors.

Factors that affect product quality, in terms of the quality of a product produced by a company sometimes experience diversity. That is caused by the quality of a product that is influenced by several factors, where these factors include: people, management, capital and also the transfer of technology that is implemented in the form of machinery or work equipment. Improving product quality will increase customer satisfaction, which in turn will improve company performance (Hussain & Ranabhat, 2013).

1.5.6 Service Quality

Quality is closely related to customer satisfaction. Good quality will encourage consumers to establish a relationship that is profitable for the company in the long term. Service quality is the expected level of excellence and control over that level of excellence to fulfill customer desires. Parasuraman says service quality is a comparison between the service felt by the customer with the quality of service that customers expect. Quality service is focuses on efforts to fulfill the needs and desires of customers along with the accuracy of their service deliver to satisfy the needs compete with the expectations of customers.

One way to put the company ahead of competitors is to provide a higher quality service than its competitors. The key is to meet the expectations of target consumers regarding the quality of the service. According to Lupiyoadi (2006) what is meant by service is any action or activity that can be offered by one party to another, which is essentially intangible and does not result in any ownership. Service is any activity

or benefit offered by one party to another and is essentially intangible and does not result in ownership of anything (Kotler, 2009).

According to Yamit (2001), quality is a dynamic condition associated with products, services, people, processes and the environment that meet or exceed expectations. While the quality of service is whatever the needs and desires of consumers. If the service they receive or enjoy turns out to be far below what they expect, consumers will lose interest in providing these services. On the other hand, if the service they enjoy meets or exceeds the level of importance, they tend to use the product/service.

Service quality is the expected level of excellence and control over the level of excellence to meet customer desires (Tjiptono, 2007). The level of service quality cannot be assessed from the company's point of view but must be viewed from the customer's point of view. According to Lupiyoadi (2006) that there are four dimensions of Servqual as follows:

1. Tangibles

The ability of a company to show its existence to external parties. The appearance and capabilities of physical facilities and infrastructure must be reliable, the condition of the surrounding environment is evidence of the services provided by the service provider.

2. Reliability

The company's ability to provide services as promised accurately and reliably. Performance must be in accordance with customer expectations which means timeliness, the same service for all customers without errors,

a sympathetic attitude and with high accuracy.

3. Responsiveness

That is a willingness to help and provide fast and precise service to customers by delivering clear information. Letting customers wait for no apparent reason causes negative perceptions of service quality.

4. Empathy

That is to give sincere and individual or personal attention given to customers by trying to understand consumer desires. Where a company is expected to have understanding and knowledge of customers, understand specific customer needs and have a comfortable operating time for customers.

Product quality and service quality is influential characteristic with reference to customer retention. That a better and a good customer relationship is stronger when there is a product awareness and these both factors are critically important for shaping the customer perception. Characteristics of product and service attributes which can be easily compared and observed by the customers before they make the purchase of product or services. Moreover, that products have more search qualities than services, with more experience and credence qualities. Here, credence properties are those characteristics of product and service attributes that cannot be differentiated even after the product, or service, has been purchased and consumed. Companies must be able to create products and services that meet consumer expectations so that consumers will feel satisfied and make repeat purchases in the

future. So that if this process continues, it will have a positive effect on company profits.

1.5.7 Previous Research

In conducting this research regarding the effect of product quality and service quality towards customer satisfaction, prior research is required that can be used for comparison and reference. Some of the previous researchers used in this study are as follows:

Table 1.3 Previous Research

Researcher Name	Research Title	Research Method	Result of Research
Nurita Andriani (2021)	Word Of Mouth Marketing Strategy By Consumer Satisfaction on Mirage Gold Jewellery Stores	Variable & Measurement : Product Quality (X1) Service Quality (X2) Customer Satisfaction (Y1) WOM (Y2) Sample : 160 respondents Data Analysis : Structural Equation Model (SEM) - Amos Program	Product quality and quality of service has a positive effect on consumer satisfaction.
B. Bungatang and R. Reynel (2021)	The Effect of Service Quality Elements on Customer Satisfaction at PT. Pegadaian Watansoppeng Branch.	Variable & Measurement : Service Quality (X) Customer Satisfaction (Y) Sample : 100 respondents Data Analysis : Structural Equation Model SPSS	The dimensions of service quality namely empathy and reliability have a dominant effect on customer Satisfaction.

Researcher Name	Research Title	Research Method	Result of Research
Mai Ngoc Khuong and Hoang Thi Hoang Anh (2018)	Direct and Indirect Effects of Customer Satisfaction through Product and Service Quality–A Study of Phu Nhuan Jewelry Stores in Ho Chi Minh City, Vietnam	Variable & Measurement : Tangibles Assurance, Empathy and Price (X) Product Quality (Y1) Perceived Service Quality (Y2) Customer Satisfaction (Z) Sample : 250 respondents Data Analysis : SPSS	Significantly positive relationships between customer satisfaction and the independent variables of assurance, price, empathy, and tangibles.
Meltem Diktaş and Mahmut Tekin (2019)	The Effect of Service Quality and Offered Values on Customer Satisfaction and Customer Loyalty: An Implementation on Jewelry Industry	Variable & Measurement : Service Quality (X1) Offered Values (X2) Customer Satisfaction (X) Customer Loyalty (Y2) Sample : 475 respondents Data Analysis : SPSS	Service Quality has a significant positive influence on Customer Satisfaction.
Abdul Gani and Augustinus Nicolaas Hillebrandes Oroh (2021)	Satisfaction, Purchasing Behavior, and Customer Loyalty Of Butik Emas Logam Mulia	Variable & Measurement : Tangible (x1) Empathy (x2) Responsiveness (x3) Reliability (x4) Assurance (x5) Customer Satisfaction (X) Purchase Behaviour (Y1) Customer Loyalty (Y2) Sample : 200 respondents Data Analysis : SEM	Service quality has a significant positive effect on Customer Satisfaction.
Bilsen Bilgilia, Aysel Erci, and	Kano Model Application in New Product Quality and	Variable & Measurement : Product Quality (X)	Relative significance of Product Quality

Researcher Name	Research Title	Research Method	Result of Research
Sevtap Ünal (2011)	Customer Satisfaction (Adaptation of Traditional Art of Tile Making to Jewelries)	Customer Satisfaction (Y) Sample : 101 respondents Data Analysis : SPSS	on Customer Satisfaction.

In this study, the author uses several previous studies to serve as reference material and comparison of literature, therefore this research has differences with previous studies. The following are the differences between previous research and current research. In previous study by Andriani (2021) the sampling method used a non-random sampling method, namely accidental sampling where the sample is carried out quickly on consumers who make purchases of gold products at the store on that day the research has been carried out. While in the current study using purposive sampling, customer who make the purchase twice or more on Sinar Mas gold jewelry store. The next difference is in the variable indicator used. In previous study variable service quality used 4 indicators there are responsiveness, tangibles, reliability, and empathy. While in the current study variable service quality has 5 indicators there are responsiveness, tangibles, reliability, empathy, and assurance. Apart from that, the differences between previous research Bungatang (2021) with the current research, on the variables independent used. In previous study, variable independent only service quality (X). But in this research, the independent variable are product quality (X1) and service quality (X2). In addition, in a previous study by Bilgili et al. (2011) there are differences in the variables measured used. In previous study, variable product quality used 4 indicators there are attractive,

durability, suitability, and features. While in the current study variable product quality used 4 indicators including durability, conformance to specifications, aesthetics, perceived quality.

1.5.8 Relationship Between Variable

1.5.8.1 Relationship between Product Quality and Customer Satisfaction

Based on research by Djumarno et al. (2018) that better product quality will maintain our high level of customer satisfaction, which encourages customers to make future purchases. Satisfaction will be obtained if the customer has a positive value that the product is qualified. Customer satisfaction can be interpreted as a feeling of pleasure or disappointment from a customer when he compares his perceptions of the performance of a product or service with the desired expectations. Thus, customer satisfaction is important, leads to the financial success of a company, and contributes to the sustainable development of the company.

The quality of product has different characteristics according to conditions, where the products are made according to the needs to meet customer expectations (Kotler, 2012). Products will be assessed as quality if in accordance with market needs such as physical goods, ideas, product uses, place, uniqueness, etc. Customers who buy a quality product will definitely feel satisfied, appropriate and happy, this provides added value to a product.

The quality of suitable products offered will have a positive impact on customer satisfaction, Razak et al. (2016) assuming products that meet expectations in all aspects will directly affect consumer satisfaction. From the above definition shows that the extent to which customer expectations are met leads to a high positive level of customer satisfaction so as to create a positive relationship between the product quality and customer satisfaction. The hypotheses that can be put forward in this study are :

H1: Product quality has a positive and significant effect on customer satisfaction at Sinar Mas Gold Jewelry Store

1.5.8.2 Relationship between Service Quality and Customer Satisfaction

The quality of services that are in accordance with the desire, consumer needs will have a positive impact on customer satisfaction, so in previous research by (Diktaş & Tekin, 2019) the quality of service affects the customer satisfaction positively. The dimension of service quality according to Parasuraman et al. (1998) shows the quality of service is able to compete and perceived performance exceeds consumer expectations so that in previous research in the private service sector jewellery industry resulted in the hypothesis of positive and significant service quality. From previous research, the following hypotheses can be drawn:

H2: Service quality has a positive and significant effect on customer satisfaction at Sinar Mas Gold Jewelry Store

1.5.8.3 Relationship between Product Quality and Service Quality on Customer Satisfaction

Research by Andriani (2021) which aimed to analyze the influence of product quality and service quality on consumer satisfaction of Mirage Gold jewellery store. The results of this study indicated that there is significant effect simultaneously between product quality and service quality on customer satisfaction. So that, the hypothesis in this research is:

H3: Product Quality and Service Quality has a significant effect on Customers satisfaction at Sinar Mas Gold Jewelry Store

Based on the above formulation, it is compiled into a hypothetical model as follows:

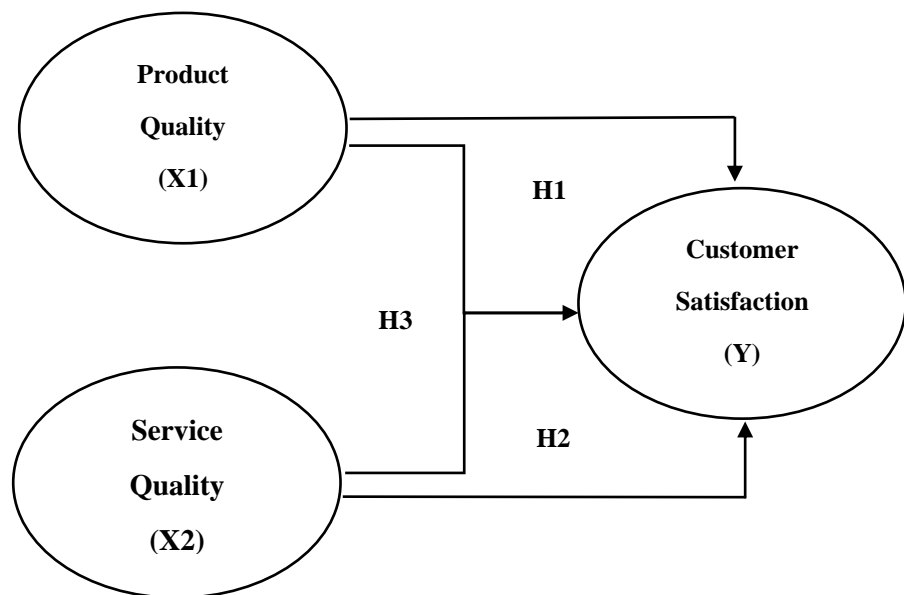


Figure 1.4 Research Hypothesis Model

1.6 Definition of Concept

1.6.1 Product Quality

Product Quality is Lupiyoadi (2006) states that customers will be satisfied if their evaluation results show that the products they use are qualified. According to Kotler (2005), Product quality is the whole feature and of a product or service on the ability to satisfy the stated/implied needs. According to Saladin (2007) Products are everything that can be offered to a market to be noticed, owned, used or consumed so as to satisfy the desires and needs.

1.6.2 Service Quality

According to Tjiptono (2011) Quality of service is something that is perceived by the customer. Customers will judge the quality of a service that is felt based on what they describe in their minds. Customers will turn to other service providers who are better able to understand the specific needs of customers and provide better services.

1.6.3 Customer Satisfaction

Kotler (2005) mentions that customer satisfaction is the level of one's feelings after comparing the performance (or outcome) that customer felt compared to their expectations. When performance exceeds expectation they will feel satisfied and vice versa, if performance does not match their expectations, will be disappointed.

1.7 Operational Definition

1.7.1 Product Quality

According to Mullins et al. (2005) if the company wants to maintain its competitive advantage in the market, companies must understand what dimensions are used by consumers to differentiate the company's products from those of competitors. Product quality is a characteristic of a product or service that meets the needs of consumers (Kotler and Armstrong, 2012).

Measuring tool of product quality using indicators including:

- 1) Durability, which means how long or the age of the product in question lasts before the product must be replaced.
- 2) Conformance to Specifications, namely the extent to which the basic operating characteristics of a product meet certain specifications from consumers or no defects are found in the product.
- 3) Aesthetics, relates to how the appearance of the product can be seen from the appearance, taste, smell, and shape of the product.
- 4) Perceived Quality, the result of using indirect measurements because there is a possibility that consumers do not understand or lack information about the product in question.

1.7.2 Service Quality

The concept of quality itself is often considered as a relative measure of the goodness of a product or service. Service or service is the provision of an invisible performance or action from one party to another (Rangkuti, 2002). Service quality

as any action or activity that can be offered by one party to another, is basically intangible and does not result in the ownership of anything (Lupiyoadi, 2007).

1.7.2.1 Dimensions of Service Quality

Parasuraman et al (2002), state that there are five main dimensions that are often used in evaluating intangible services for a product, namely:

- a. Responsiveness (willingness to help customers and provide prompt service)
- b. Reliability (ability to perform services as promised immediately and accurately)
- c. Empathy (caring to give individual attention to customers, understand customer needs)
- d. Assurance (knowledge, courtesy of staff and their ability to convey trust and confidence)
- e. Tangibles (facilities, equipment and appearance of staff)

1.7.2.2 Indicator of Service Quality

1.7.2.2.1 Responsiveness

Responsiveness, namely the willingness to help and provide fast (responsive) and appropriate service to customers, with clear information delivery. Letting customers wait for no apparent reason causes a negative perception of service quality (Ratnasari & Aksa, 2011). Responsiveness indicators taken from Tjiptono & Chandra (2016) is fast service.

1.7.2.2.2 Reliability

Reliability, namely the company's ability to provide services as promised accurately and reliably. Must be in accordance with customer expectations, means timely performance, error-free service, sympathetic attitude, and with high accuracy (Ratnasari & Aksa, 2011). Reliability indicators from Tjiptono & Chandra (2016) is handling service and complain problems.

1.7.2.2.3 Empathy

According to Ratnasari & Mastuti (2011) empathy, which is to give attention, be sincere and individual or personal to customers by trying to understand customer desires, where a company is expected to have an understanding and knowledge about customers, understand customer needs specifically, and have a comfortable operating time for customers. The Empathy indicators adapted from Tjiptono & Chandra (2016) is employees who understand customer needs.

1.7.2.2.4 Assurance

According to Ratnasari & Mastuti (2011) assurance and certainty, namely knowledge, courtesy, compensation, and the ability of company employees to foster customer trust in the company. Consists of components: communication, credibility, security, competence, and courtesy. Assurance indicators or guarantees has two items modified from Tjiptono & Chandra (2016) warranty product for customer and accuracy in service.

1.7.2.2.5 Tangibles

Tangibles or physical evidence, namely the ability of a company to show its existence to external parties. Appearance and abilities the company's physical facilities and infrastructure and the state of the surrounding environment are: tangible evidence of the services provided by the service provider, technology as well as the appearance of the employees (Ratnasari & Aksa, 2011). Tangibles indicators or physical evidence are as follows visually appealing facilities and employees who look neat and professional (Tjiptono & Chandra, 2016).

1.7.3 Customer Satisfaction

Many indicators are used to measure consumer satisfaction with the products or services of a company or organization. Unfortunately, until now there has been no consensus among researchers on indicators that measure consumer satisfaction. However, differences in these indicators exist due to differences in the types, dimensions and environments of consumers of firms.

To measure customer satisfaction, the indicators used are as follows:

1. Service according to customer expectations
2. Satisfied with service quality
3. Satisfied with the quality of service so that they are interested in visiting again
4. Willing to recommend products and services
5. Satisfied with the quality of administrative services

Table 1.4 Research Variables and Operational Definitions

Variable	Indicator	Items
Product Quality (X1) Product quality is a characteristic of a product or service that meets the needs of consumers. (Kotler and Armstrong, 2012)	1) Durability	Sinar Mas gold jewelry store products not easily damaged
	2) Conformance to Specifications	Sinar Mas gold jewelry store products have long durability in long-term use Gold grade value in Sinar Mas gold jewelry store regulated based on SNIs
	3) Aesthetics	Sinar Mas gold jewelry store products have unique and interesting models Sinar Mas gold jewelry store products follows fashion trends
	4) Perceived Quality	Sinar Mas gold jewelry store products have good quality gold grade value so they don't change color easily
Service Quality (X2) Service quality as any action or activity that can be offered by one party to another, is basically intangible and does not result in the ownership of anything. (Lupiyoadi, 2007)	1) Responsiveness	Sinar Mas store employees have fast service to customer
	2) Reliability	The readiness of Sinar Mas store employees in handling problems and consumer complaints
	3) Empathy	Sinar Mas store employees understand the needs and desire of consumers
	4) Assurance	Sinar Mas store provides product guarantees to consumers Employees of Sinar Mas store have sufficient knowledge to answer customers questions
	5) Tangibles	The physical facilities at Sinar Mas store are visually appealing

Variable	Indicator	Items
		Employees at Sinar Mas store are neat and professional
Customer Satisfaction (Y)	1) Service according to customer expectations	Service according to customer expectations
Customer satisfaction is an effective response to experience of consumption or an evaluation of conformity or nonconformity the perceived difference between previous expectations and the actual performance of the product after usage. (Engel et al., 1993)	2) Satisfied with service quality	Satisfied with service quality
	3) Satisfied with the quality of service so that they are interested in visiting again	Satisfied with the quality of service so that they are interested in visiting again
	4) Willing to recommend products and services	Willing to recommend products and services
	5) Satisfied with the quality of administrative services	Satisfied with the quality of administrative services

1.8 Research Method

1.8.1 Types of Research

This research uses quantitative research. According Sugiyono (2019) method quantitative research methods based on the philosophy of positivism, used to examine the population of a particular sample, sampling technique generally random, data collection using research instruments, data analysis is quantitative or statistical with the aim of testing established hypothesis.

According Sekaran & Bougie (2016) a variable is anything that can take on differing or varying values. According to Indrawati (2015), a variable is anything that has a value and that value can be different and subject to change. Operationalization of variables is a process of reducing the variables contained in

the research problem into the smallest parts so that the size classification can be known, making it easier to obtain the data needed for the assessment of research problems. The variables used in this study are as follows:

a. Independent variable

According Sekaran & Bougie (2016) an independent variable is one that influences the dependent variable in either a positive or negative way. That is, when the independent variable is present, the dependent variable is also present, and with each unit of increase in the independent variable, there is an increase or decrease in the dependent variable. In other words, the variance in the dependent variable is accounted for by the independent variable. In this research, the independent variable is product quality (X1) and service quality (X2).

b. Dependent variable

According Sekaran & Bougie (2016) the dependent variable is the variable of primary interest to the researcher. The researcher's goal is to understand and describe the dependent variable, or to explain its variability, or predict it. In other words, it is the main variable that lends itself for investigation as a viable factor. In this research, the dependent variable is customer satisfaction (Y).

1.8.2 Population and Sample

1.8.2.1 Population

The population refers to the entire group of people, events, or things of interest that the researcher want to investigate. It is the group of people, events, or things of interest for which the researcher wants to make inferences based on

sample statistics (Sekaran & Bougie, 2016). In this study the population used all customers at Sinar Mas gold jewelry store.

1.8.2.1 Sample

Sample is part or member of the population that has certain characteristics, and represents the sample that has been determined by the researcher beforehand. It is conducted considering a very large population with an unknown number as well as the limitations of funds, time, and research labour so that researchers use samples taken from that population. For this reason, if the number of samples from a population is uncertain, the formula from Cooper & Emory (1996) is used, where the number of samples is determined directly at 100. Therefore, the number of samples in this study were 100 customers who make the purchase twice or more on Sinar Mas gold jewelry store.

1.8.3 Sampling Technique

In order for the selected sample to approach the characteristics of the population, the sampling technique used must also consider the representativeness of the population in the sample (Indrawati, 2015). The sampling technique in this study is non probability sampling. According Sugiyono (2019) non probability sampling is a sampling technique that does not provide equal opportunities/or opportunities for each element or member of the population to be selected as a sample. While the type of non-probability sampling used is accidental sampling, which is a sampling technique based on accident, that is anyone who happens to meet the researcher can be used as a sample, if considered that the person who accidentally meets is suitable as a data source.

So the researchers set certain criteria that can be used as samples in this study are the characteristics of the respondents as follows:

1. Customer of Sinar Mas gold jewelry store
2. Age range of 17 - 55 years
3. Customer who make the purchase twice or more on Sinar Mas gold jewelry store.

1.8.4 Type and Data Source

1.8.4.1 Type of Data

a. Quantitative Data

Quantitative data is a type of data in the form of numbers or amounts where the data is presented in the form of tables, graphs, or pictures that can be measured in size or the amount guarantees the level of accuracy of the data obtained. In this study, the likert scale used as a research instrument that has answer criteria the questions included strongly disagree, disagree, moderately agree, agree, and strongly agree obtained from the results of the questionnaire answers of 100 respondents of Sinar Mas gold jewelry store customer which will then be carried out convert into numeric form or numbers 1,2,3,4,5.

b. Qualitative Data

Qualitative data is data in the form of words, spoken or written sentences in the form of a description of the object to be studied by interviewing respondents. Usually qualitative data is better able to describe the object of research more clearly or in detail. Qualitative data needed in research this is an explanation of the variable symptoms in the form of high and low product sales from product

quality and service quality variables, the amount of customer satisfaction and a general description of the Sinar Mas gold jewelry store.

1.8.4.2 Data Source

a. Primary Data

According to Sugiyono (2019) primary sources are data sources that directly provide data to data collectors. Primary data has been used in this study by interviewing the owner of Sinar Mas gold jewelry store. Primary data can be in the form of results from interviews or results from questionnaires that have been filled out by the respondents related to the four variables, namely product quality, service quality, and customer satisfaction.

b. Secondary Data

Secondary data is data obtained indirectly, where research data is obtained through intermediaries (other parties). Secondary data in this study can be in the form of data obtained from books, published journals, theses, articles, previous researchers and internet media that contain relevant information and have something to do with the research theme. In this research is secondary data obtained, among others, in the form of consumer data recorded as customer of Sinar Mas gold jewelry store.

1.8.5 Measurement Scale

According Sekaran & Bougie (2016), measurement means gathering data in the form of numbers. To be able to assign numbers to attributes of objects we need a scale. A scale is a tool or mechanism by which individuals are distinguished as to how they differ from one another on the variables of interest to our study. Scaling

involves the creation of a continuum on which our objects are located. The measurement scale in this study uses a Likert Scale to measure attitudes, opinions and perceptions of individuals or groups regarding social phenomena. With the Likert Scale, the variables to be measured become indicators as points to complete the question or statement items, as follows:

Table 1.5 Likert Scale

Research Level	Score
Strongly agree	5
Agree	4
Neutral	3
Disagree	2
Strongly disagree	1

Source : Indrawati (2015)

1.8.5 Data Collection Techniques

The strategy in collecting data in this research uses an archive strategy. In this research data collection techniques include interviews, observations (direct and participant), questionnaires, and relevant.

1.8.7 Data Processing Techniques

In this study using data processing techniques in the form of editing, coding, scoring and tabulating.

1.8.7.1 Editing

Editing is a stage for re-checking all respondents' answers that have been collected to find out and assess the suitability of the data in order to avoid wrong measurements so that they can be processed further.

1.8.7.2 Coding

Coding is the process of coding or marking the respondent's answers. At this stage a score or symbol will be given on the questionnaire, so it can make easier the process of data processing.

1.8.7.3 Scoring

Scoring is the stage of giving a score per item on the questionnaire to be able to obtain data for purposes of testing hypotheses.

1.8.7.4 Tabulating

Tabulating is the process of structuring and compiling data presented in table form to facilitate researchers in processing existing data and adapted to research objectives.

1.8.8 Analysis Techniques

1.8.8.1 Descriptive Analysis

Descriptive analysis is a statistic used to analyze data by describing or describing the data that has been collected as it is without intending to make conclusions that apply to the public or generalizations (Sugiyono, 2019). Descriptive analysis is used to determine the effect of product quality and service quality towards customer satisfaction on Sinar Mas gold jewelry store. Descriptive analysis will be processed by researchers. The contents of the data to be processed from the questionnaire are:

- a. Respondents statement regarding product quality by Sinar Mas gold jewelry store.

- b. Respondents statement regarding service quality in Sinar Mas gold jewelry store product.
- c. Respondents statement regarding customer satisfaction on Sinar Mas gold jewelry store

1.8.8.2 Quantitative Analysis

Quantitative analysis is analysis of data that has been collected, processed and classified into several categories expressed in the form of numbers. In this study, quantitative analysis was carried out using SPSS software tools. The quantitative analysis used in this study is :

1. Validity Test

Validity test is a test that is carried out if there is a similarity between the data collected and the data that actually occurs in the object under study. Therefore, any existing question momentum can be said to be valid if the instrument or indicator can measure the variable and vice versa. So, to be able to find out whether the score of each question item is valid or not, the statistical criteria are set as follows:

- a. Valid, if $r_{\text{test}} > r_{\text{table}}$
- b. Invalid, if $r_{\text{test}} < r_{\text{table}}$.
- c. Significant (α) = 0.05 (5%) to calculate the r value compared to the table r value.

2. Reliability

According to Sekaran & Bougie (2016), reliability refers to the consistency of observations, usually whether two (or more) observers, or the same observer on separate occasions, observing the same event attain the same results. Reliability indicates how stably and consistently the instrument taps the variable. In this reliability test, the Alpha Cronbach technique is used. To test whether the instrument is reliable or not, it is usually said to be reliable if the value is > 0.6 . The closer the value or number 1 is, the better (Sugiyono, 2019). In general, the rules used in the study can be said to be reliable, calculated by the Cronbach Alpha formula, as follows:

- a. If the value is > 0.60 , then the questionnaire can be said to be reliable, so that the instrument can be used.
- b. If the value is < 0.60 , then the questionnaire can be said to be unreliable, so the instrument cannot be used.

3. Correlation Coefficient Analysis

The Correlation Coefficient Test is used to determine whether the independent variable affects the dependent variable. In addition, this test is also carried out to see whether or not the influence of the independent variable on the dependent variable is strong. To determine the relationship or correlation coefficient between these variables, use the following criteria:

Table 1. 6 Correlation Coefficient Analysis

Coefficient Interval	Relationship Level
0.00 – 0.199	Very low
0.20 – 0.399	Low
0.40 – 0.599	Medium
0.60 – 0.799	Strong
0.80 – 0.1000	Very strong

Source : Sugiyono (2009)

4. Coefficient of Determination Analysis

This test is conducted to analyze how much influence the independent variable has on the dependent variable both partially and simultaneously. The following is the coefficient of determination formula:

$$CD = (r)^2 \times 100\%$$

Where,

CD = Coefficient of Determination

r^2 = Determination

The coefficient of determination ranges from 0 to 1. If the coefficient of determination approaches 1, it means that the influence of the independent variable on the dependent variable is getting stronger, and otherwise if the coefficient of determination approaches 0, the influence of the independent variable on the dependent variable is getting weaker.

5. Simple Linear Regression Analysis

This analysis is conducted to determine the effect between the

independent variable and the dependent variable. The results of this study indicate whether the increase and decrease of the dependent variable can be done through increasing and decreasing the state of the independent variable. The general equation for simple linear regression is as follows :

$$Y = a + bX$$

Where,

Y = Subject in the predicted dependent variable

a = Y when X = 0,

b = Regression coefficient

X = Independent variable

6. Multiple Linier Regression Analysis

Multiple linear regression analysis is used to determine the state (increase and decrease) of the dependent variable when two or more independent variables as predictor factors are manipulated (increased and decreased in value). This tool is used to explain the form of the relationship between two or more variables. The regression model used in this study is as follows:

$$Y = a + b_1X_1 + b_2X_2$$

Where,

Y = Dependent Variable (Customer Satisfaction)

a = Fixed Number

X1, X2 (Independent Variable)

X1 = Product Quality

X2 = Service Quality

b1 = Corellation Coefficient X1 to Y

b2 = Corellation Coefficient X2 to Y

7. T Test (Partial Significance Test)

The t test is an individual test, this test is intended to determine whether the independent variable (X) partially has an influence or not on the dependent variable (Y) used. In this study, the t test was used to determine whether the variables of product quality and service quality had an effect on customer satisfaction. To make measurements using the

following formula : $t = \frac{r\sqrt{n-2}}{1-r^2}$

Where,

t = calculated t value or t test

r = correlation coefficient as a comparison value

n = number of data sizes

The following is the hypothesis used :

- a. Ho or the null hypothesis written as $H_0 : b_1 = 0$, which means that there is no effect of the independent variables (product quality and service quality) on the dependent variable (customer satisfaction).
- b. Ha or the alternative hypothesis written as $H_a : b_1 \neq 0$, which means that there is an effect of the independent variables (product quality and service quality) on the dependent variable (customer

satisfaction).

There are several bases used to determine the t test, which are as follows:

- a. If the significance value is < 0.05 or $t \text{ test} > t \text{ table}$: H_a is accepted or H_0 is rejected. This means that there is a positive and significant effect of independent variables (product quality and service quality) partially on the dependent variable (customer satisfaction).
- b. If the significance value is > 0.05 or the $t \text{ value} < t \text{ table}$: H_0 is accepted or H_a is rejected. This means that there is no positive and significant effect of independent variables (product quality and service quality) partially on the dependent variable (customer satisfaction).

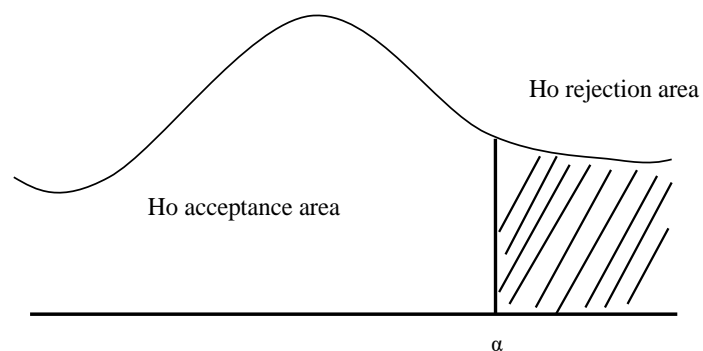


Figure 1.5 One Tail T-Test

8. F Test (Simultaneous Significance)

The F test fundamentally shows whether together the independent variables (product quality and service quality) simultaneously influence the dependent variable (customer satisfaction). In order to carry out the F Test, the formula used is:

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

Where,

R^2 = Multiple correlation coefficient

K = Number of independent variables

n = Number of samples

The following is the hypothesis formulated / used:

- a. H_0 : $b_1, b_2 = 0$, therefore there is no significant simultaneous effect between the independent variables (product quality and service quality) on the dependent variable (customer satisfaction).
- b. H_a : $b_1, b_2 \neq 0$, therefore there is a significant simultaneous effect between the independent variables (product quality and service quality) on the dependent variable (customer satisfaction).

There are several bases used to determine the F test, as follows:

- a. If the significance value is < 0.05 or $F_{test} > F_{table}$, it means H_a is accepted and H_0 is rejected. Then there is an influence of independent variables (product quality and service quality) on the dependent variable (customer satisfaction).
- b. If the significance value is < 0.05 or $F_{test} < F_{table}$, it means that H_a is accepted and H_0 is rejected. Then there is no simultaneous influence of the dependent variable on the independent variable.