

## **Strategies to Increase Customer Loyalty Through Service Quality, Health Awareness And Customer Satisfaction Studies On Public Sector Services PERUMDA Tugu Tirta Drinking Water City Of Malang**

Prof. Dr. Rofiaty, S.E., M.M., Nurul Hidayatinnisa  
[rofiaty@ub.ac.id](mailto:rofiaty@ub.ac.id)  
Universitas Brawijaya

### **ABSTRACT**

This study aims to determine and analyze the effect of service quality, health awareness of drinking water products on customer satisfaction and loyalty to customers Perumda Air Minum Tugu Tirta Malang City 2024. Customer satisfaction and loyalty is one of the benchmarks of the success of a company. What is interesting and novelty of this research is the measurement of service quality through indicators: Requirements; mechanism & procedure system; completion time; cost / tariff; product, specification, type of service; executor competence; executor behavior; handling complaints, suggestions & input; facilities & infrastructure; product quality, distribution. In addition, novelty which is a novelty in this study is by adding the variable customer awareness of health as an independent variable. The population is all customers and the sample is taken 400 customers who are making payments at the counters of the PERUMDA Tugutirta office in Malang city, on the grounds because customers can directly assess the quality of the service. The results showed that service quality was able to increase customer satisfaction and loyalty, while health awareness was not able to increase customer satisfaction and loyalty. customer satisfaction was able to mediate the effect of service quality on customer loyalty, but was unable to mediate the effect of health awareness on customer loyalty. the effect of service quality on customer satisfaction proved significant through the mediation of health awareness. The research findings show that customer behavior in consuming clean water does not pay attention to health awareness because of the guarantee that Perumda Tugu Tirta Malang city has received halal certification from MUI, as well as from the Ministry of Health. The results of this study are able to provide input and suggestions for service improvement for the company and at the same time be able to solve crucial problems obtained based on complaints from customers, so that the results of this study can be used as guidelines in carrying out future policies.

**Keywords:** Service Quality, Customer Awareness of Health, Satisfaction and, Customer Loyalty.

## 1. INTRODUCTION

The Regional Drinking Water Company (PDAM) is one of the regional companies engaged in public service by always striving to achieve superior performance. According to the Regulation of the Minister of Home Affairs No. 2 of 2007, PDAM can be defined as a Regionally-Owned Enterprise engaged in the service or provision of drinking water for the community. The main purpose of a regionally-owned enterprise is to serve the public interest and promote economic development in the region concerned. So in this case, it is important for Regional Drinking Water Companies to always maintain the quality of the services provided as one of the strategies in achieving customer satisfaction and customer loyalty.

Regional Drinking Water Company (PDAM) Tugu Tirta Malang City as a regional company that has a business scope in drinking water management and management of dirty water facilities has the main objective to meet the needs of clean water for the people in Malang City. As of December 2023, Perumda Air Minum Tugu Tirta Malang City has served 80% of the total area of Malang City and has served 846,130 people from the total population of Malang City. Customers are spread across 5 (five) sub-districts in Malang City, namely Kedungkandang sub-district, Lowokwaru sub-district, Blimbing sub-district, Klojen sub-district, and Sukun sub-district. In providing drinking water, Perumda Air Minum Tugu Tirta Malang City continues to strive to improve services to the community and maintain the quality of services provided. The results of research by Fu, X. M., Zhang, J. H., & Chan, F. T. (2018) shows that service quality is proven to be significantly able to increase customer loyalty (Hizam et.al. 2021, Ashiq, R., & Hussain, A. 2023, Ngo, V. M., & Nguyen, H. H. 2016, Yilmaz, V., & Ari, E. 2017, Juwaini, A., et al. 2022, Chodzaza, G. E., & Gombachika, H. S. 2013, Al-Dweeri et.al. 2018).

The results of research that examines the effect of service quality on customer satisfaction are proven to have a significant effect and service quality is measured using e-service quality (Chodzaza, G. E., & Gombachika, H. S. 2013, Juwaini, A., et al. 2022) while Afifah, N., & Asnan, A. (2015) measure service quality on PDAM customer satisfaction. Health awareness is proven to affect customer loyalty and purchasing decisions (Wijaya, 2016). Meanwhile, the results of research that examines the effect of health awareness on buying interest show

significant results, and consumer buying interest will encourage loyalty to a product (Deni et al., 2024). Lay and Kartika (2019) in a study entitled the role of perceived restaurant food healthiness on perceived value and customer satisfaction: a study at madame chang restaurant in Surabaya, the results showed that the stronger health awareness proved to be positively significant in increasing customer satisfaction.

Research that measures customer satisfaction on loyalty is very important to do and the results show that satisfied customers can increase loyalty (Hizam et.al. 2021, Ashiq, R., & Hussain, A. 2023, Ngo, V. M., & Nguyen, H. H. 2016, Yilmaz, V., & Ari, E. 2017, Juwaini, A., et al. 2022, Chodzaza, G. E., & Gombachika, H. S. 2013, Al-Dweeri et.al. 2018)

The novelty of this study is that the service quality variable is measured by indicators: (1) New customer submission requirements (2) Customer classification system according to customer conditions, there is fairness in adding services, the service mechanism is very easy to understand & the service procedures set are easy to understand (3) Completion time, officers in providing services are responsive and timely completion as promised (4) Completion time, officers in providing services are responsive and timely completion as promised (5) Service procedures set are easy to understand The service procedures set are easy to understand (3) Completion time, the officer in providing the service is responsive and the completion is on time as promised (4) Cost / tariff, the tariff charged is in accordance with what is published, the tariff is considered reasonable, the progressive tariff is realistic, and the tariff paid is proportional to the amount of water usage (5) Products, specifications, types of services received are appropriate (6) Implementer competence reflects the ability of the officer, the speed of the officer's response is very good and easy to understand (7) The behavior of the executor in providing services is polite, neat, and friendly (8) Handling complaints, suggestions & input reflected in the officer's response in providing services is polite, neat, and friendly. feedback is reflected in the officer's response in handling complaints quickly, precisely, and there is a medium for channeling complaints and suggestions (9) quantity and quality of facilities & infrastructure (10) The quality of water products is odorless, tasteless, colorless, and clear (11) Water distribution is smooth 24 hours and water availability is sufficient. These indicators are adjusted to the object of this research, namely the

quality of public sector services of the Regional Drinking Water Company (PDAM).

Every company wants to always maintain customer loyalty, because loyalty is a reflection of the company's success. The purpose of this research is to test and analyze:

1. To test and analyze the effect of service quality on customer loyalty
2. To test and analyze the effect of service quality on customer satisfaction
3. To test and analyze the effect of service quality on health awareness
4. To test and analyze the effect of customer satisfaction on customer loyalty
5. To test and analyze the effect of health awareness on customer loyalty
6. To test and analyze the effect of health awareness on customer satisfaction
7. To test and analyze the mediating role of Health Awareness through the effect of Service Quality on Satisfaction
8. To test and analyze the mediating role of Health Awareness through the effect of Service Quality on Customer Loyalty
9. To test and analyze the mediating role of Customer Satisfaction through the effect of service quality on Customer Loyalty
10. To test and analyze the mediating role of Customer Satisfaction through the effect of Health Awareness on customer Loyalty.

## 2. LITERATURE REVIEW

### 2.1.1. Public Service

As a state apparatus institution, the main task of the government is one of which is reflected in the provision of services to the community, while the community as a user has the right to get these services fairly. Government officials are required to be able to increase responsiveness to community needs and improve the efficiency of public services for the main purpose of community satisfaction. According to the Big Indonesian Dictionary, service or serving means helping to prepare someone's needs, and service is a

matter or procedure in serving someone. Hasibuan, M 2005) explains that service is any activity or benefit that can be provided by one party to another which is basically intangible and does not result in ownership of something, and cannot be associated with a physical product. Forms of service are not always in the form of physical or visible things, but forms of response in the form of words or things that cannot be seen physically can also be interpreted as a service and also have the same influence on the quality of service provided.

According to Law No. 25 of 2009 concerning Public Services, the definition of public services is all activities in the context of fulfilling basic needs in accordance with the basic rights of every citizen and resident for goods, services, and / or administrative services provided by service providers related to public interests. Then in the 1945 Constitution of the Republic Indonesia which explains that to meet the basic needs of every citizen, the effectiveness of a government system is determined by the good and bad implementation of public services. The realization of quality public services is the main goal of the utilization of the state apparatus. Positive perceptions from the public towards professional, effective, efficient and accountable public service performance will raise the positive image of the government or service providers in the eyes of the community. In organizing public services, the principles of public services have been regulated in Law No. 25 of 2009 concerning Public Services which consist of: (1) public interest; (2) legal certainty; (3) equal rights; (4) balance of rights and obligations; (5) professionalism; (6) participatory; (7) equality of treatment or non-discrimination; (8) openness; (9) accountability; (10) facilities and special treatment for vulnerable groups; (11) timeliness; and (12) speed, convenience, and affordability.

As a public service provider, specifically in this research is one part of a Regional-Owned Enterprise (BUMD), namely the Regional Public Company (Perumda) Tugu Tirta Drinking Water of Malang City, whose establishment aims to contribute to the development of the regional economy in general and regional revenue specifically in the field of



providing drinking water to the people of Malang City. Furthermore, another goal is also to provide benefits to the community and to gain profits to increase sources of local revenue outside of local taxes and levies. As stated in the explanation of Law No. 25 of 2009 concerning Public Services article 5 paragraph 3 letter b which states that public goods whose availability is the result of the activities of state-owned enterprises and / or regionally-owned enterprises that have been delegated the task of organizing public services (public service obligations), such as electricity from the management of PT (Persero) PLN and clean water from the management of Perumda Air Minum. So it can be concluded that Perumda Air Minum Tugu Tirta Malang City is part of a public service provider.

### **2.1.2 Service Quality**

Service quality is directly related to measuring how well the services provided by a company can meet the expectations of its customers. Parasuraman, Zeithaml, and Berry (1985) define service quality as the difference between service expectations or expectations and perceived service, so it can be seen that there are two main factors that can affect service quality, namely service expectations or expectations (expected service) and services received or perceived (percieved service). In addition, Zeithaml (1988) states that perceived service quality is an assessment of customers regarding the superiority of the services that have been provided by an institution or company as a whole. For service providers or service providers, the quality aspect is important to always be improved and innovated continuously in order to meet the specifications that consumers want, so that quality can be felt directly by consumers based on actual experience with the products, services and / or services received.

The service quality model according to Gronroos (1984) consists of functional service quality and technical service quality. Functional service quality relates to how business results in the form of products / services are delivered to customers in terms of the behavior and

friendliness of the service provider. In contrast, technical quality relates to management perceptions and emphasizes more on service procedures, how services are provided, and what is received by consumers is in accordance with consumer expectations. Service quality contributes to increased market share and customer satisfaction (Anderson & Zeithaml, 1984; Parasuraman, Zeithaml & Berry, 1985; Zeithaml, 2000). Therefore, it is important for an organization to be able to achieve good service quality in an organization in order to maintain its competitive advantage.

There are several instruments in measuring service quality, but this research focuses more on public service providers who already have several legal bases for organizing public services. Measurement of service quality refers to the Minister of Administrative Reform and Bureaucratic Reform Regulation No. 14 of 2017 concerning Guidelines for Preparing Community Satisfaction Surveys for Public Service Delivery Units where there are 9 (nine) service elements that are indicators of service quality measurement to determine the level of community satisfaction. These elements include, namely:

1. Requirements, are conditions that must be met in the management of a type of service, both technical and administrative requirements.
2. Systems, Mechanisms, and Procedures, are standardized service procedures for service providers and recipients including complaints.
3. Completion Time, is the period required to complete the entire service process of each type of service.
4. Fees / Tariffs, are fees charged to service recipients in managing and / or obtaining services from organizers, the amount of which is determined based on an agreement between the organizer and the community.
5. Product Specification Type of Service, is the result of each type of service specification where what is given to customers with what has been determined must be appropriate.
6. Executor Competence, is the ability that must be possessed by the

executor which includes knowledge, expertise, skills, and experience.

7. Executor Behavior, is the attitude of service officers in providing services. 8. Handling of Complaints, Suggestions, and Feedback, is a procedure for the implementation of complaint handling and the required follow-up.

9. Facilities and Infrastructure, is everything that can be used as a tool to achieve goals.

### **2.1.3 Health Awareness**

This research is included in the realm of marketing, especially focusing on consumer behavior, which is the most important part of a business organization in controlling its success in the marketing field, because consumers and customers will judge the high and low satisfaction with the quality of products and services received, which in turn the customer will remain loyal or not. In everyday life, people tend to pay attention to health aspects when they want to buy a product or service. This reflects an awareness of health, namely the understanding and attention of individuals to the importance of maintaining physical and mental conditions through various activities that support a healthy lifestyle. Especially in the midst of increasing information about healthy lifestyles and the risk of disease triggered by modern lifestyles.

In general, one of the basic needs that requires consumers to always pay attention to health factors in purchasing products, especially the demand for clean water. According to Plank & Gould (1990), the definition of health awareness is an individual's concern with their health. According to Rosenstock (1974), health awareness is formed based on individual perceptions of the risks and benefits of certain health actions. In the context of buying decisions, people tend to choose products that are perceived to reduce health risks (such as organic food) or provide direct benefits (such as health supplements). Ajzen (1991) in the Theory of Planned Behavior (TPB) states that human behavior is influenced by the intention to carry out the behavior, which is influenced by three main factors: attitudes towards behavior, subjective



norms (opinions of others), and perceived behavioral control.

According to the World Health Organization (WHO) (1986), Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. WHO states that the notion of health is a state of complete physical and mental as well as one's social well-being. On the other hand, the condition of health awareness is a condition of organ function that functions properly and there is no disturbance, so that a person realizes the importance of health and prioritizes his health so that he can move well without obstacles.

#### **2.1.4 Satisfaction**

Satisfaction is related to people's emotional assessment after feeling or receiving a service. Customer satisfaction is a person's feeling of pleasure or disappointment that arises after comparing the performance of the product that is thought against the expected performance (Kotler & Keller, 2007). Herington & Weaven (2009) define customer satisfaction as the result of a comparison between customer expectations and the actual perceived service quality performance. Furthermore, Oliver (1980) states that customer satisfaction is the customer's response to the difference between expectations and perceived performance after consumption.

Based on this definition, it can be concluded that customer satisfaction will be achieved if customer expectations or expectations match the reality of product performance received for the consumption of products, services and/or services. Customer satisfaction is considered the key to a long-term relationship between product, service and/or service providers and users or consumers (Castillo & Benitez, 2013; Chou, et al., 2014). This is because satisfaction will increase purchase intention and repeated consumption of a product. With satisfied customers or a positive response from customers to the quality of service provided by service providers, it will lead to the company's sustainable competitive advantage.

The concept of 'marketing' in services is primarily concerned with satisfying customer needs and wants, so customer satisfaction can be

considered the heart of all marketing activities (Machleit & Mantel, 2001).

### **2.1.5 Loyalty**

Research conducted by Kim, Lee, and Yoo (2006) found that satisfied customers show loyalty and provide positive word of mouth (wom). Thus, customer satisfaction is recognized as one of the important antecedents of loyalty and hence both academics and practitioners have a keen interest in gaining a better understanding of customer satisfaction.

In marketing studies, loyalty (Oliver, 1981), behavioral intention (Zeithaml et al., 1996), and repurchase intention (Anderson, 1994), although there are some minor differences, all refer to how a person decides to repurchase a product or reuse the service in the future.

Gramer and Brown (2006) define loyalty as the degree to which a consumer shows repeat purchasing behavior towards a service provider, has a positive disposition or attitude towards the service provider's services, and only considers using the service provider when there is a need to use the service. In conclusion, loyalty is a condition where consumers will be loyal to make repeat purchases continuously. Loyal customers are not only buyers who make repeat purchases, but also those who maintain a positive attitude towards service providers.

Customer loyalty is referred to as the ultimate consequence of the overall and cumulative experience that customers have with a company (Brunner, Stöcklin, & Opwis, 2008). Customer satisfaction can lead to customer loyalty because people tend to be rational and risk-averse so they tend to reduce risk and stick with service providers with whom they already have a good experience. In fact, customer satisfaction has been suggested to be an antecedent of loyalty in the service context in previous studies (Belas & Gabcova, 2016; Coelho & Henseler, 2012; Lam, Shankar, Erramilli, & Murthy, 2004; Mittal & Kamakura, 2001).

Consumer loyalty is the result of encouraging consumers by service providers to buy a product again (Ruyter et al. 1998). According to Morgan and Hunt (1994), customer loyalty can be described as

repurchasing from a service provider and becoming a customer of the service provider again. Many researchers argue that customer loyalty is important for companies to improve their performance and competitiveness (Khatibi et al. 2002; Chou et al. 2014). Kotler and Singh (1981) define customer loyalty as a source of sustainable competitive strength for the service sector. Oliver (1997), Chou and Lu (2009), and Chou et al. (2014) state that the two most effective ways to ensure customer engagement are to provide high-quality products and impeccable service, and to demonstrate a satisfied attitude.

Finally, the combined loyalty measurement approach combines the first two approaches and measures loyalty based on customer service preferences, brand switching tendencies, frequency of purchase, and total number of purchases. The use of attitudes and behaviors in the definition of loyalty substantially increases the predictive power of loyalty (Bowen and Chen, 2001). This research has an understanding that loyalty is a composite measurement that includes repeat patronage, self-declared retention, price insensitivity, resistance to counter-persuasion, and likelihood of positive word of mouth (Jaishankar et al., 2000), but focuses on measuring attitudes (Butcher et al., 2001).

### **3. METHODOLOGY**

This type of research is explanatory (explanatory research) using a quantitative approach. Explanatory research is used to explain the position of the variables being studied and their influence between one variable and another. Where in this study aims to analyze and explain the influence between public service quality, customer satisfaction and customer loyalty. The quantitative approach is used to process, analyze and interpret statistical data obtained in research through hypothesis testing. The population is PDAM customers, while the sampling technique uses purposive sampling with 400 respondents who are making water account payments at the PDAM office counters on the grounds that customers can directly assess the quality of service.

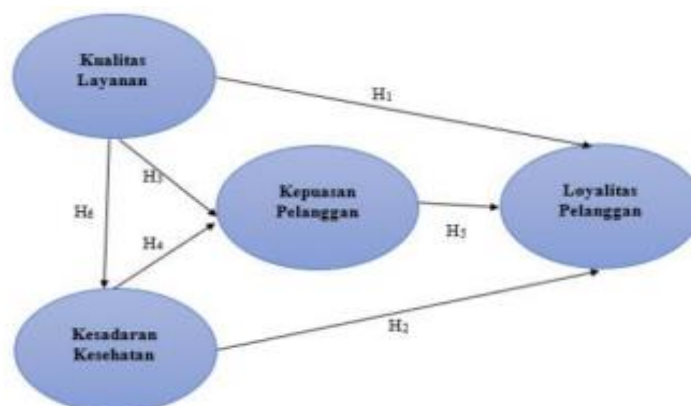
### **4. RESULTS**

#### 4.1 Respondents Description

Respondents of this study are customers who are paying monthly water accounts at payment counters, namely at the head office and WR Supratman branch office. The majority of respondents are 40-49 years old at 26%, 30-39 years old and 50-59 years old at 24% each. The majority of respondents who use offline services (directly visit the office) are dominated by male customers as much as 57%, followed by female customers as much as 42%, and 1% of agency customers. The education level of respondents is quite varied, ranging from elementary school graduates to university graduates. In the respondent's occupation, the majority of respondents who use the largest offline service are entrepreneurs / employees at 41% of respondents.

#### 4.2 Hypothesis test

**Figure 1. Research conceptual framework**



Description:

KL = Service Quality

KS = Health Awareness

KPL = Customer Satisfaction

LP = Customer Loyalty

#### 4.3 Validity test

To determine whether the model has good validity, it is characterized by a loading factor value greater than 0.7, in the table below shows the Loading Factor value above 0.7, so it can be said that the items on the measurement indicator are concluded to be Valid. **Table 1. Validity Test**

| VARIABL | Indicat | Measurement | Outer | Cronbach |
|---------|---------|-------------|-------|----------|
|---------|---------|-------------|-------|----------|

| ES                           | or | Item       | Loading | alpha |
|------------------------------|----|------------|---------|-------|
| <b>Service Quality</b>       | WP | <b>WP1</b> | 0.716   | 0.921 |
|                              | S  | <b>S2</b>  | 0.708   |       |
|                              |    | <b>S3</b>  | 0.845   |       |
|                              |    | <b>S4</b>  | 0.821   |       |
|                              | D  | <b>D3</b>  | 0.755   |       |
|                              | SP | <b>SP1</b> | 0.783   |       |
|                              |    | <b>SP2</b> | 0.771   |       |
|                              | PA | <b>PA3</b> | 0.779   |       |
|                              |    | <b>PA4</b> | 0.800   |       |
| <b>Health Awareness</b>      | KS | <b>KS1</b> | 0.930   | 0.883 |
|                              |    | <b>KS2</b> | 0.940   |       |
|                              |    | <b>KS3</b> | 0.825   |       |
| <b>Customer Satisfaction</b> | PU | <b>PU2</b> | 0.867   | 0.793 |
|                              |    | <b>PU3</b> | 0.757   |       |
|                              |    | <b>Pu4</b> | 0.896   |       |
| <b>Customer Loyalty</b>      | LP | <b>LP1</b> | 0.903   | 0.791 |
|                              |    | <b>LP2</b> | 0.916   |       |

Source: Primary data processed (2024)

From the table above, it can be seen that each of the remaining measurement items from many previous measurements shows an outer loading value above 0.7, this means that the convergent validity for the measurement model can be said to be valid (Hair et al., 2019). These measurement items reflect the variables measured in the study. For example, in the service quality variable for indicator S with measurement items S3 and S4, the outer loading value is above 0.7, which means that these



measurement items must be maintained at the implementation level.

#### 4.4 Reliability test

Reliability testing to ensure that the questionnaire is sufficiently reliable, which means that when making repeated measurements, the results are the same. Parameters that measure that the questionnaire is said to be valid using a Cronbach alpha value greater than 0.6 and composite reliability. From the results of the calculation with smart pls version 4, the results are as shown in Table.

**Table 2. Reliability Test**

|                              | <b>Cronbach's alpha</b> | <b>Composite reliability (rho_a)</b> | <b>Composite reliability (rho_c)</b> | <b>Average variance extracted (AVE)</b> |
|------------------------------|-------------------------|--------------------------------------|--------------------------------------|---|
| <b>Customer Satisfaction</b> | <b>0.793</b>            | <b>0.809</b>                         | <b>0.879</b>                         | <b>0.710</b>                            |
| <b>Health Awareness</b>      | <b>0.883</b>            | <b>0.923</b>                         | <b>0.927</b>                         | <b>0.809</b>                            |
| <b>Service Quality</b>       | <b>0.921</b>            | <b>0.924</b>                         | <b>0.934</b>                         | <b>0.564</b>                            |
| <b>Customer Loyalty</b>      | <b>0.791</b>            | <b>0.793</b>                         | <b>0.905</b>                         | <b>0.827</b>                            |

Source: Primary data processed (2024)

From the table above, it can be seen that each of these variables has a Cronbach alpha, composite reliability and AVE value above the standard, so the measurement model for these variables is said to be reliable.

#### 4.5 Results of hypothesis test

The results of the direct effect test between variables with parameters P value <0.05 and T Statistics> 1.65.

**Table 3. Direct Hypothesis Test Results**

| <b>Hypothesis</b> | <b>Path Analysis</b> |           | <b>Original sample (O)</b> | <b>Sample mean (M)</b> | <b>Standard deviation (STDEV)</b> | <b>T statistics ( O/STDEV )</b> | <b>P values</b> | <b>Description</b> |
|-------------------|----------------------|-----------|----------------------------|------------------------|-----------------------------------|---------------------------------|-----------------|--------------------|
|                   | <b>From</b>          | <b>To</b> |                            |                        |                                   |                                 |                 |                    |

|           |                              |                              |        |        | V)    |       |              |                 |
|-----------|------------------------------|------------------------------|--------|--------|-------|-------|--------------|-----------------|
| <b>H1</b> | <b>Service Quality</b>       | <b>Customer Loyalty</b>      | 0.581  | 0.607  | 0.115 | 5.056 | <b>0.000</b> | <b>Accepted</b> |
| <b>H2</b> | <b>Service Quality</b>       | <b>Customer Satisfaction</b> | 0.0554 | 0.0559 | 0.100 | 5.538 | <b>0.000</b> | <b>Accepted</b> |
| <b>H3</b> | <b>Service Quality</b>       | <b>Health Awareness</b>      | 0.575  | 0.577  | 0.114 | 5.041 | <b>0.000</b> | <b>Accepted</b> |
| <b>H4</b> | <b>Customer Satisfaction</b> | <b>Customer Loyalty</b>      | 0.199  | 0.188  | 0.083 | 2.383 | <b>0.017</b> | <b>Accepted</b> |
| <b>H5</b> | <b>Health Awareness</b>      | <b>Customer Loyalty</b>      | 0.223  | 0.200  | 0.122 | 1.829 | <b>0.067</b> | <b>Rejected</b> |
| <b>H6</b> | <b>Health Awareness</b>      | <b>Customer Satisfaction</b> | -0.021 | -0.020 | 0.124 | 0.172 | <b>0.864</b> | <b>Rejected</b> |

Source: Primary data processed, 2024

Based on the table above, it can be seen that service quality has a significant effect on customer loyalty. Customer quality has a significant effect on customer satisfaction. Service quality has a significant effect on quality awareness. Customer satisfaction has a significant effect on customer loyalty. Health awareness has no effect on customer loyalty and health awareness has no effect on customer satisfaction with a P value of 0.864.

**Table 4. Indirect Hypothesis Test Results**

| <b>Hypot hesis</b> | <b>Path Analysis</b> |                   |           | <b>Origin al sampl e (O)</b> | <b>Sampl e mean (M)</b> | <b>Stan dar d devi atio n (ST DE</b> | <b>T statist ics ( O/S TD EV )</b> | <b>P valu es</b> | <b>Descrip tion</b> |
|--------------------|----------------------|-------------------|-----------|------------------------------|-------------------------|--------------------------------------|------------------------------------|------------------|---------------------|
|                    | <b>From</b>          | <b>Mediati on</b> | <b>To</b> |                              |                         |                                      |                                    |                  |                     |

|            |           |            |            |        |        | V)    |       |       |                 |
|------------|-----------|------------|------------|--------|--------|-------|-------|-------|-----------------|
| <b>H7</b>  | <b>KL</b> | <b>KS</b>  | <b>KPL</b> | -0.012 | -0.009 | 0.076 | 0.159 | 0.873 | <b>Rejected</b> |
| <b>H8</b>  | <b>KL</b> | <b>KS</b>  | <b>LP</b>  | 0.128  | 0.116  | 0.078 | 1.642 | 0.101 | <b>Rejected</b> |
| <b>H9</b>  | <b>KL</b> | <b>KPL</b> | <b>LP</b>  | 0.110  | 0.105  | 0.053 | 2.082 | 0.037 | <b>Accepted</b> |
| <b>H10</b> | <b>KS</b> | <b>KPL</b> | <b>LP</b>  | -0.004 | 0.000  | 0.025 | 0.168 | 0.867 | <b>Rejected</b> |

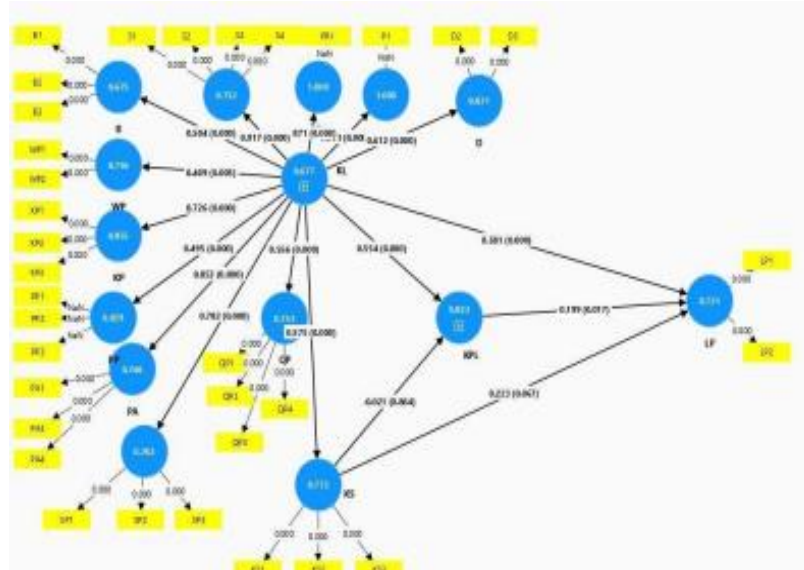
Source: Primary data processed, 2024

Health awareness cannot mediate the relationship between service quality and customer satisfaction with a p value of 0.873. Health awareness cannot mediate the relationship between service quality and customer loyalty with a p value of 0.101. Customer satisfaction able to mediate the relationship between service quality and customer loyalty. Meanwhile, customer satisfaction does not mediate the relationship between health awareness and customer loyalty.

## 5. DISCUSSION AND IMPLICATION

### 5.1 Discussion'

**Figure 2. Direct Effect Path of Structural Model**



Source: Primary data processed, 2024

1. The higher the quality of service is proven to be able to increase customer loyalty at Perumda Air Minum Tugu Tirta Malang City through ease of requirements. Service quality as measured by the smoothness of water, odorless and tasteless, speed of service and complaint handling, as well as friendliness, politeness, and officer skills that drive high customer loyalty.
2. The higher the quality of service provided, the higher the customer satisfaction. This shows that although the quality of service measured through smooth water, odorless and tasteless, speed of service and complaint handling, as well as friendliness, politeness, and skills of officers are the drivers of high customer satisfaction, including the cost and tariff of water are also considered reasonable and encourage customer satisfaction.
3. Good service quality is proven to be able to encourage increased public awareness of health. Clear water quality, no sediment, no odor and taste is what has a high role in increasing public awareness of health in the use of clean water Perumda Tugu Tirta Malang City.
4. The higher satisfaction that customers receive from the company's services through good water quality, complaint handling and fast service, as well as affordable prices and costs have proven to be able to increase customer loyalty.
5. The more health-conscious customers prove unable to increase customer loyalty, because it is never considered in making decisions to consume clean

water from Perumda Tugu Tirta. Customers or the public have the perception that the company has automatically considered health issues, which is proven by having certification from the Indonesian Ministry of Health, ISO certification, and MUI halal certification.

6. Health awareness is not able to increase customer satisfaction, because customer behavior in consuming clean water does not consider health issues because they think that the Perumda Tugu Tirta Malang City company has considered various factors related to health as evidenced by having MUI halal certification and an award from the Ministry of Health which is a quality guarantee that water quality meets health requirements.
7. Health Awareness cannot mediate the relationship between Service Quality and Customer Satisfaction, which means that customers become satisfied without having to have health awareness because the quality of the company's products and services is guaranteed.
8. Health Awareness cannot mediate the relationship between Service Quality and Customer Loyalty, which means that customers become loyal do not have to have health awareness because the quality of the company's products and services is guaranteed.
9. Customer Satisfaction is able to mediate the effect of service quality on Customer Loyalty, which means that the level of customer loyalty can also be achieved not only by good service quality but also through efforts to achieve customer satisfaction. So customers who are satisfied with the service are a strategy to increase loyalty.
10. Customer satisfaction does not mediate the effect of Health Awareness on customer loyalty, because health awareness is not able to increase customer satisfaction and loyalty.

## 5.2 Implication

### 5.2.1 Theoretical Implications

1. Contribution to service quality literature. This study strengthens the theory that links service quality to customer satisfaction and loyalty. The results support previous studies such as by Parasuraman et al. (1985) and Zeithaml (1988) which emphasize the importance of service quality to customer loyalty



2. The role of health awareness in customer loyalty. Although the results of this study show that health does not have a significant effect on customer loyalty, this study still provides new insights by incorporating the health awareness variable into the service quality model. This can be a reference for further studies on factors that moderate this relationship.
3. Mediation mechanism in the relationship between variables. This study shows that customer satisfaction mediates the effect of service quality on customer loyalty. This finding strengthens the mediation theory as discussed in the Structural Equation Modeling (SEM) model.

### **5.2.2 Practical Implications**

1. Service Quality Improvement. Perumda Air Minum Tugu Tirta can use the research findings to improve aspects of service that customers consider important, such as easy service procedures, speed of completion, and response to complaints.
2. Communication on Health Awareness. Although health awareness is not significant in increasing loyalty, companies can improve communication about the importance of healthy drinking water quality to educate customers. Halal and health certifications can be used as promotional materials.
3. Customer Satisfaction Management. Since customer satisfaction is proven to mediate the relationship between service quality and customer loyalty, companies need to focus on customer satisfaction by ensuring all service indicators, such as facilities and infrastructure, remain as expected.

### **5.2.3 Research Limitations**

1. Limited Generalization. The research was conducted on customers of Perumda Air Minum Tugu Tirta in Malang City, so the results may not be generalizable to other companies or regions.
2. Unmeasured Variables. This study did not measure other external variables such as economic factors or government policies that might affect customer loyalty.
3. Research Design. Quantitative survey methods with Likert scales have limitations in capturing the nuances of customer experience. Qualitative studies can provide deeper insights into customer behavior.

## **6. CONCLUSION**

### **6.1 Conclusion**

Good service quality, including smooth water flow, odorless and tasteless water, service speed, complaint handling, friendliness, politeness, and staff skills, is proven to be able to increase customer loyalty through ease of requirements. Service quality can increase customer satisfaction, and customer satisfaction can increase customer loyalty. Customer satisfaction acts as a partial mediator in the relationship between service quality and satisfaction. Meanwhile, health awareness variables have no effect on customer satisfaction and loyalty. Customer satisfaction does not mediate the effect of health awareness on quality because customers almost never consider health awareness factors in making decisions to consume clean water, given that the perception of PDAM company customers automatically already consider health issues as evidenced by having certification from the Indonesian Ministry of Health, ISO certification and MUI Halal certification.

## REFERENCES

- Afifah, N., & Asnan, A. (2015). The impact of corporate social responsibility, service experience and intercultural competence on customer company identification, customer satisfaction and customer loyalty (case study: PDAM Tirta Khatulistiwa Pontianak West Kalimantan). *Procedia-Social and Behavioral Sciences*, 211, 277-284.
- Anderson, C., & Zeithaml, C.P. (1984). Stage of the product life cycle, business strategy, and business performance. *Academy of Management Journal*, 27(1), 5-24.
- Anderson, C., & Zeithaml, C.P. (1984). Stage of the product life cycle, business strategy, and business performance. *Academy of Management Journal*, 27(1), 5-24.
- Ashiq, R., & Hussain, A. (2023). Exploring the effects of e-service quality and e-trust on consumers' e-satisfaction and e-loyalty: insights from online shoppers in Pakistan. *Journal of Electronic Business & Digital Economics*.
- Astuti, H.J. and Nagase, K. (2016b). A framework for conceptualizing patient loyalty to healthcare organizations. *Health Services Management Research*, 29(3), pp.70-78. doi:<https://doi.org/10.1177/0951484816663562>.
- Chodzaza, G. E., & Gombachika, H. S. (2013). Service quality, customer satisfaction and loyalty among industrial customers of a public electricity utility in Malawi. *International Journal of Energy Sector Management*, 7(2), 269-282.
- Deni, Normala, Wijayanto, Gatot, Nursanti, Aida. (2024). The Effect of Health Awareness and Product Knowledge on Purchase Intention of Lemonilo Instant Mi Products Mediated by Attitude in Pekanbaru City. *JAMBU AIR: Journal of Accounting Management Business and International Research*.
- Fu, X. M., Zhang, J. H., & Chan, F. T. (2018). Determinants of loyalty to public transit: A model integrating Satisfaction-Loyalty Theory and Expectation-

- Confirmation Theory. *Transportation Research Part A: Policy and Practice*, 113, 476-490.
- Hizam, S. M., Ahmed, W., Akter, H., & Sentosa, I. (2021). Understanding the public rail quality of service towards commuters' loyalty behavior in Greater Kuala Lumpur. *Transportation Research Procedia*, 55, 370-377.
- Jen, W., Tu, R., Lu, T., 2011. Managing passenger behavioral intention: an integrated framework for service quality, satisfaction, perceived value, and switching barriers. *Transportation* 38, 321-342.
- Komar, K. (2019). THE EFFECT OF HEALTH CONSCIOUSNESS, PRODUCT KNOWLEDGE AND BRAND TRUST ON PURCHASE DECISIONS (Study on Tolak Angin Consumers in Kebumen Regency).
- Lay, V. V., & Kartika, E. W. (2019). THE ROLE OF PERCEIVED RESTAURANT FOOD HEALTHINESS ON PERCEIVED VALUE AND CUSTOMER SATISFACTION: A STUDY AT MADAME CHANG RESTAURANT SURABAYA. *Journal of Hospitality Management*, 5. <https://doi.org/10.9744/jmhot.5.2.109%E2%80%93116>.
- Marcella, C., Juniwati and Heriyadi (2024). The Effect of Health Awareness, Product Quality on Repurchase Interest with Trust as an Intervening Variable. *INOVASI: Journal of Economics, Finance and Management*, 20(3).
- Ngo, V. M., & Nguyen, H. H. (2016). The relationship between service quality, customer satisfaction and customer loyalty: An investigation in Vietnamese retail banking sector. *Journal of competitiveness*.
- Parasuraman, A., Zeithaml, V.A., Berry, L.L., 1988. SERVQUAL: A multiple item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12-40
- Wijaya, Ham Dennys Surya. (2016). Analysis of the Influence of Health Culture, Health Awareness, and Product Perception on Buying Decision of Male Condom Products for Young Adults in Surabaya: *Petra Business & Management Review* Vol.2, .1, 2016.
- WHO. (1986). The Otta Wa Charter For Health Promotion.
- Yilmaz, V., & Ari, E. (2017). The effects of service quality, image, and customer satisfaction on customer complaints and loyalty in high-speed rail service in Turkey: a proposal of the structural equation model. *Transportmetrica A: Transport Science*, 13(1), 67-90.
- Zeithaml, V.A. (2000). Service quality, profitability and the economic worth of customers: What we know and what we need to learn. *Journal of the Academy of Marketing Science*, 28(1), 67- 85.