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Influence of Service Quality, Water Tariffs, and Technological Innovation on PDAM Tirtanadi Customer Satisfaction

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ABSTRACT: It is known that the increasing water bill arrears at PDAM Tirtanadi HM Yamin Branch are due to customers' lack of satisfaction with the quality of service, water rates and technological innovation offered. Finding connections and evaluating the impact of the three independent variables on the dependent variable—customer satisfaction—is the goal of this study. The technological innovation variable is novel and has never been investigated in tandem with other variables. This study employs a quantitative associative approach methodology. The sample was determined using the Slovin formula so that there were 100 respondents, with a research population of 27,904 people. The following test were employed in the study of this research: validity test, reliability test, normality test, multicollinearity test, heteroscedasticity test, multiple linear regression test, t test, f test, and coefficient of determination test. The findings of the study indicate that: (1) service quality to customer satisfaction are positively and significantly correlated; (2) water tariffs to customer satisfaction are positively and significantly correlated; (3) technological innovation to customer satisfaction are positively and significantly correlated; and (4) service quality, water rates, and technological innovation are positively and significantly correlated to customer satisfaction at the same time. PDAM Tirtanadi HM Yamin branch needs to improve service quality, suitability of water tariffs, and socialize the use of technological innovations that have been launched.

Keywords: Service Quality, Water Tariffs, Technological Innovation, Customer Satisfaction, PDAM Tirtanadi

INTRODUCTION

Air Quality Management and Air Pollution Control are governed by Government Regulation No. 14 of 1987. In this regulation, air quality standards and emission standard criteria for various

sources of air pollution are set. By limiting the upper limit of acceptable air pollution levels, the objective is to safeguard human health, maintain the environment, and promote sustainable development. This regulation also regulates procedures for monitoring and evaluating air pollution, as well as corrective actions that must be taken in the event of a violation of the standards that have been set. Thus, Government Regulation No. 14 of 1987 has become an important legal basis in efforts to maintain air quality in Indonesia.

The Regional Drinking Water Company (PDAM) implements the marketing process and profit collection as part of its operational strategy in providing clean water services to the community (Santoso & Aprianingsih, 2017). The marketing process of PDAM includes service promotion, pricing in accordance with government policies, as well as efforts to increase customer satisfaction through good and efficient service (Fauzi & Suryani, 2018; Haryono, 2016; Imanda & Nuridin, 2018). Meanwhile, profit collection is carried out by optimally managing the resources and infrastructure owned, maintaining operational efficiency, and making appropriate investments to increase the capacity of clean water services and infrastructure. Thus, PDAM not only plays a role in meeting the basic needs of the community for clean water, but also carries out its economic function to ensure operational continuity and long-term development. (Armanto, 2018).

Various considerations and efforts are made by the company for customer loyalty, but in reality, it is quite difficult to make it happen. As is the case with PDAM Tirtanadi, especially PDAM Tirtanadi HM Yamin Branch. Because even though it has been operating for quite a long time, this company still has problems with outstanding customer receivables. It can be seen from the amount of arrears obtained directly from company documents. From the data obtained, it can be seen that many customers are in arrears of payments and even end up cutting off the flow of water due to months of arrears that are too long and payments that have not been made. In 2022, there are 27,064 customers in arrears, 327 of which have been cut off from water flow, 24,167 have paid off arrears, and 2,513 for other reasons so that the application for an extension of the time for repayment of arrears can be understood. Meanwhile, in 2023 arrears are seen to be increasing. There were 100,587 customers who were in arrears in water account payments, 161 customers who had their water flow cut off, 99,392 customers who paid off arrears, and 1,034 customers who applied for an extension of the repayment time for other reasons that could be accepted by the company (PDAM Tirtanadi Cabang HM Yamin, 2023). This will cause the profit generated to decrease.

The phenomenon that occurred was not in line with the existing expectations and rules. Because the water account bill charged to each water customer number (NPA) should have been adjusted to the applicable tariff and must be paid on time. This is certainly a problem because there is a mismatch between expectations and reality that occurs on location. From these problems, it can be connected to the findings of research carried out by (Pane & Hasibuan, 2023) showing the factors that cause the occurrence of water account arrears. Among the contributing causes include hidden meters, non-functioning water supplies, poor water quality, customer financial difficulties, and rising demand Similar research conducted by (Adriansyah & Nurwani, 2022) the factors that caused arrears were hidden customer water meters, closed customer house gates, weak or completely stopped customer water flow, delinquent notices not submitted by officers, customer habits to pay at the last minute, lack of labor to make cuts, and low community income. Similarly,

the research carried out by (Sartika & Kusmilawaty, 2022). The study explained that the causes of water account debt are financial condition, consumer satisfaction, quality of distribution, payment procedures and systems, unfriendly attitude of officers, low late penalty costs, customer water not flowing, and arrears notification letters that are not given by officers.

Starting from this, the researcher summarized it into three main variables that will be studied further to see how significant the impact of these three factors on the level of consumer satisfaction is indicated to be a factor in water account arrears, namely: service quality, water tariffs, and technological innovation. Research continues to be carried out to provide advice to companies to be able to minimize the number of bad accounts that occur through customer satisfaction. Perception of taste arising from the service given to clients is what (Kotler & Amstrong, 2019) define as satisfaction. As for customer satisfaction, that's a person's sense of contentment following a comparison of their expectations and their assessment of performance, per (Kotler & Keller, 2009; Mariansyah & Syarif, 2020; Sá et al., 2016; Trukeschitz et al., 2021). (Nguyen & Nguyen, 2022) asserts that when individuals purchase anything, their perception, assessment, and emotional response to it result in customer satisfaction. According to (Handi, 2006), the service provider is responsible for 70% of the variables that lead to businesses failing to meet customer expectations, with technology and systems having an impact on the remaining 30%.

As the study (Eko, 2019) customer satisfaction is significantly positively impacted by service quality. Likewise, (Mustaghfiroh, 2019) determined that service quality has a positive and noteworthy impact on customer satisfaction. Similar findings were also reported by (Prakarsa, 2022), those who emphasizing the positive and considerable impact of service quality on customer satisfaction (Hisham et al., 2021; Pai et al., 2022). Meanwhile, the study (Anindya et al., 2022) also verified that customer satisfaction was significantly benefited by high-quality service. According to (Sianipar, 1998), service is the process, strategy, or capacity to explicitly address the wants and grievances of others in order to make them feel satisfied. (Parasuraman et al., 1998) states that there are five dimensions of indicators to measure the quality of services; these indicators are tangible, meaning they take the shape of physical quality and other tangible circumstances that exist in the provision of services. Reliability is the capacity to deliver services in a timely, accurate, and satisfactory manner. The goal of responsiveness is for service providers to assist clients by offering them accommodating services. Understanding client requirements via communication is known as empathy. assurance to the client about the service provider's civility, competence, and dependability.

Water tariff variable testing is the process of evaluating and adjusting the tariff charged by PDAM or other water service providers to its customers. This test involves analyzing various factors such as production costs, operational costs, investment in infrastructure, and related government policies. Similarly, (Anindya et al., 2022) pointing out its main recommendation is to ensure that the rates set cover all the costs involved in providing quality water services, while taking into account the economic capabilities of the communities using the services. (Tambunan, 2019) Testing water tariff variables can also involve consultation with stakeholders such as communities, regulators, and governments to ensure fairness and sustainability in clean water management in an

area. However, research (Purba & Alvian, 2019) indicate that pricing factors have a slight but favorable impact on consumer satisfaction.

A tariff is the sum of money customers must pay in exchange for goods and services or other exchange rates in order to possess or utilize goods and services (Kotler & Amstrong, 2019). According to (Mulyadi, 2012), cost is an economic sacrifice for an event that has already happened or will happen in exchange for a benefit that is measured in monetary units. Based on the product quality specifications obtained, the customer's evaluation of the cost is a key indicator of the tariff (Kartajaya et al., 2004). To further determine whether a product has a positive value that makes the customer happy with the purchase or a negative value that makes the customer feel unsatisfied with the product, the tariff can also be evaluated based on how well the customer's sacrifices and the value they receive match. This theory allows for the deduction of conclusions from the tariff's indicators, which include the tariff's adequacy in relation to the benefits realized and the product's quality attained. Meanwhile, the price range is modified based on the consumer's ability to pay, the competitiveness of tariffs for similar products, whether or not they can compete in the market, and the suitability of costs with the quality offered to customers, as per (Tjiptono, 2008) tariff measurement indicators. Additionally, there is a resemblance between the two ideas regarding tariff measurement: the appropriateness of tariffs in relation to product quality.

Previous research has also examined the variables of technological innovation; for example, (Antanegoto et al., 2019) testing water tariff variables is a crucial step in maintaining a balance between the financial sustainability of service providers and the accessibility of services for the community. Organizational and technical innovation are the two subcategories of process innovation. Physical modifications to tools, processes, and systems are being incorporated by technological innovation to alter the way goods are manufactured. According to (Damanpour & Aravind, 2012), organizational innovation is innovation in administrative processes, organizational strategy, and organizational structure. According to Government of Indonesia, technology is the gathering, preparing, storing, processing, announcing, analyzing, and/or disseminating data. Technology is the process of enhancing added value. A product that is used in this process or produced is integrated with other goods and becomes a crucial component of the system (Miarso, 2011). The knowledge that people apply to solve issues and carry out activities in an organized, methodical manner is another definition of technology (Prawiradilaga, 2012). The technology acceptance model (TAM), which is an adaptation of the theory of reason action (TRA), is the indicator of technology measurement, and according to (Davis, 1989), it explains the causal link between the need and usage of a system and the conviction that it is valuable.

The researcher noted the existence of empirical gaps identified in PDAM Tirtanadi as well as in previous research literature. To fill this gap, researchers are interested in developing studies that blend three key factors: quality of service, water tariffs, and technological innovation, which have not previously been comprehensively examined together. The purpose of this study is to investigate and evaluate the effects that water rates, technological innovation, and service quality may have on client satisfaction at the PDAM Tirtanadi HM Yamin Branch. Therefore, the primary goal of this study is to close the information gap by investigating the link between these factors in the context of the PDAM Tirtanadi HM Yamin Branch. Th The study " Analysis of the Influence of Service

Quality, Water Tariff, and Technological Innovation on Customer Satisfaction of the Tirtanadi Regional Drinking Water Company " is what the researcher is interested in conducting as a result.

METHOD

This research study applies a quantitative approach with an associative strategy, because according to (Sugiyono, 2022) associative it has a goal, namely to understand the impact or relationship between two or more variables. This research was conducted at PDAM Tirtanadi HM Yamin branch, Tirto street No.1, Perintis, Medan City, North Sumatra. It will be held from March 25 to April 5, 2024. Data is collected through the dissemination of questionnaires, observations, interviews, and existing documentation. Because the samples were chosen at random from the entire population without taking into account the hierarchy within it, the characteristics of the sample used in this study were obtained using a basic random sampling technique. Using the Slovin formula, the sample was calculated. The use of the Slovin formula because according to (Sugiyono, 2022) Slovin is a formula applied in determining the size of the sample that is considered to be able to represent the entire existing population. The formula is:

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

Source: (Husein, 2003)

Explanation:

n : Sample magnitude

N : Population magnitude

e : Rate of error

With a population of 27,904 customers at the HM Yamin Branch PDAM, the following computational samples of the Slovin formula were obtained:

$$n = \frac{27.904}{1 + 27.904\ (10\%)^2} = 99{,}64$$

By rounding, the sample used was 100 customers at the HM Yamin Branch PDAM, whether they were in arrears or not. The goal is that the results of the influence obtained can be balanced from two perspectives. These respondents were chosen because they were among the first to express pleasure with the firm's water prices, technical advancements, and service quality. This was stated as the reason for the water account arrears that the company experienced.

The results of the questionnaire were then evaluated for validity and reliability to check the accuracy and reliability of the measurement. Furthermore, a classical assumption examination was carried out which included checking the adequacy of normal distribution, the existence of multicollinearity,

and heteroskedasticity spread to test the distribution of data. Furthermore, to test the hypothesis, Pearson correlation analysis was carried out to evaluate the level of relationship between variables. In addition, hypothesis analysis was carried out using multiple linear regression, partial test (t test), simultaneous test (F test), and coefficient of determination. The data processing uses SPSS (Statistical Program for Social Sciences) software version 23.0

Table 1 Questionnaire Return Rate

List of questions shared	100
List of questions returned	100
Incomplete list of questions filled in	0
List of questions that can be processed	100

Source: Data Processing Result, 2024

According to the table 1, all questionnaires are returned and the data can be completely processed and used as an instrument in this research.

RESULT AND DISCUSSION

There were 100 participants in the study's sample. According to statistics, the majority of respondents are male (55%), the age of the majority of respondents is 45-60 years (46%), and the majority of respondents have subscribed to PDAM Tirtanadi HM Yamin branch for more than 7 years (78%).

Validity Test Results

Service Quality Variable (X1)

Table 2 Variable Validity Test X1

No	Minimum Value Limit	Value	Explanation
1	0,202	0,742	Valid
2		0,837	
3		0,806	
4		0,786	
5		0,673	
6		0,795	

Source: Processing Result of Data, 2024

According to the table 2, the calculated r value of all X1 instruments is greater than the minimum value limit. So, all X1 instruments are declared valid.

Water Tariff Variable (X2)

Table 3 Variable Validity Test X2

No	Minimum Value Limit	Value	Explanation
1	0,202	0,846	Valid
2		0,875	
3		0,827	
4		0,762	
5		0,828	

Source: Processing Result of Data, 2024

According to the table 3, the calculated r value of all X2 instruments is greater than the minimum value limit. So, all X2 instruments are declared valid.

Technological Innovation Variable (X3)

Table 4 Variable Validity Test X3

No	Minimum Value Limit	Value	Explanation
1	0,202	0,715	Valid
2		0,816	
3		0,809	
4		0,793	
5		0,758	

Source: Processing Result of Data, 2024

According to the table 4, the calculated r value of all X3 instruments is greater than the minimum value limit. So, all X3 instruments are declared valid.

Customer Satisfaction Variable (Y)

Table 5 Variable Validity Test Y

No	Minimum Value Limit	Value	Explanation
1	0,202	0,752	Valid
2		0,726	
3		0,814	
4		0,769	
5		0,756	
6		0,762	

Source: Processing Result of Data, 2024

According to the table 5, Every Y instrument's computed r value exceeds the minimum value restriction. Therefore, Y's instruments are all deemed valid.

Reliability Test Results

Service Quality Variable (X1)

Table 6 Variable Reliability Test X1

Variable	N	Cronbach Alfa	Standard	Information
Items	6	0,862	0,600	Reliable

Source: Processing Result of Data, 2024

According to the table 6, the X1 variable's Cronbach alpha estimated number (value) is more than the 0.600 norm. So, all X1 instruments are declared reliable

Water Tariff Variable (X2)

Table 7 Variable Reliability Test X2

Variable	N	Cronbach Alfa	Standard	Information
Items	5	0,883	0,600	Reliable

Source: Processing Result of Data, 2024

According to the table 7, the X2 variable's Cronbach alpha estimated number (value) is more than the 0.600 norm. So, all X2 instruments are declared reliable

Technological Innovation Variable (X3)

Table 8 Variable Reliability Test X3

Variable	N	Cronbach Alfa	Standard	Information
Items	5	0,837	0,600	Reliable

Source: Processing Result of Data, 2024

According to the table 8, the X3 variable's Cronbach alpha estimated number (value) is more than the 0.600 norm So, all X3 instruments are declared reliable

Customer Satisfaction Variable (Y)

Table 9 Variable Reliability Test Y

Variable	N	Cronbach Alfa	Standard	Information
Item	6	0,854	0,600	Reliable

Source: Processing Result of Data, 2024

According to the table 9, the Y variable's Cronbach alpha estimated number (value) is more than the 0.600 norm. So, all Y instruments are declared reliable

Classical Assumption Test

The three test kinds used in the classical assumption test are the normality, multicollinearity, and heteroskedasticity tests.

Normality Test Results

Table 10 Normality Test

One-Sample Kolmogorov-Smirnov Test	
Test Statistic	,067
Asymp. Sig. (2-tailed)	,200c,d

Source: Processing Result of Data, 2024

According to the table 10, as can be shown, the significance value is more than 0.05 at 0.200. Consequently, it may be said that the data in this regression model either satisfies the assumption of normalcy or is distributed normally.

Multicollinearity Results

Table 11 Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Service Quality	,501	1,996
	Water Rates	,480	2,083
	Technological Innovation	,778	1,286

Source: Processing Result of Data, 2024

According to the table 11, it demonstrates that the three variables' tolerance numbers are higher than 0.10 and their VIF numbers are fewer than 10. Thus, it may be concluded that the independent variables do not exhibit multicollinearity.

Heteroskedasticity Test Results

Table 12 Heteroskedasticity Test

	Model	t	Sig
1	(Constant)	4,103	,000
	Service Quality	-,198	,135
	Water Rates	-,418	,677
	Technological Innovation	,615	,540

Source: Processing Result of Data, 2024

Table 12, was carried out using the Glejser test. The statistical results showed that the significance value of all independent variables was >0.05, namely service quality (X1) = 0.135; water tariff (X2) = 0.677; technological innovation (X3) = 0.540. Thus, it may be concluded that the independent variables do not exhibit heteroskedasticity.

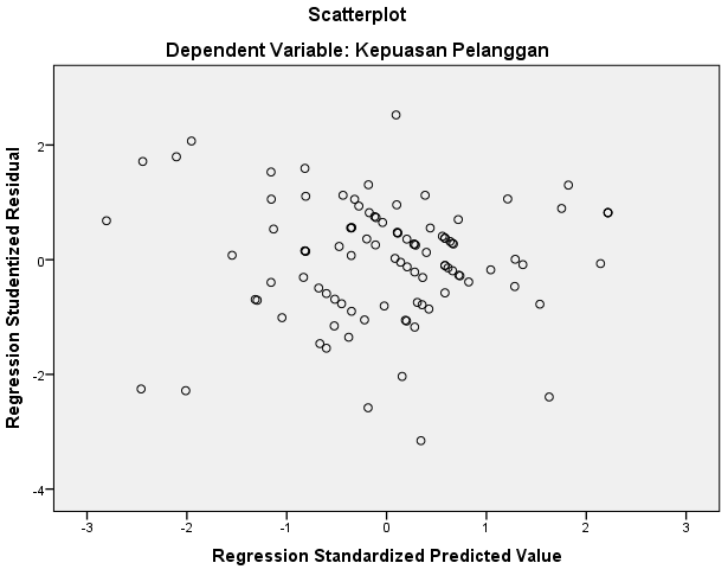

Figure 1 Heteroskedasticity Test

Source: Processing Result of Data, 2024

The findings of the heteroskedasticity test are also seen in the figure 1. In the results, given that the scatterplot's dots do not congregate at a single location or create a distinctive pattern, it is possible to conclude that the data lack heteroskedasticity.

Multiple Regression Analysis Results

Table 13 Multiple Linear Regression Test

		B
1	(Constant)	7,764
	Service Quality	,193
	Water Rates	,406
	Technological Innovation	,185

Source: Processing Result of Data, 2024

Table 13 shows how the multiple regression analysis findings can be used to create a multiple regression model in the following ways:

$Y = \alpha + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3$

$Y = 7{,}764 + 0{,}193\ X1 + 0{,}406\ X2 + 0{,}185\ X3$

a. The value of the constant obtained is 7.764. This can be interpreted that when the independent variable has a value of 0 (i.e. a fixed value), the dependent variable will have a value of 7.764. In other words, customer satisfaction will be 7,764 if the factors of water rates, service quality, and technical innovation have no effect.
b. For the service quality variable, the regression coefficient was positive (+) and stood at 0.193. This demonstrates that customer satisfaction is positively and significantly impacted by the service quality variable. This implies that customer satisfaction tends to rise along with an improvement in service quality, and vice versa.
c. The water tariff variable likewise had a positive (+) regression coefficient of 0.406. This indicates that water tariffs have a significant and positive impact on customer satisfaction; in other words, as water prices rise, so does customer contentment.
d. The technological innovation variable has a positive (+) regression coefficient of 0.185. This suggests that consumer satisfaction is positively and significantly impacted by technology progress. Customer satisfaction tends to rise in tandem with technical advancement, and vice versa.

Partial Test Results (T Test)

Table 14 T-Test

Model		t	Sig.
1	(Constant)	5,200	,000
	Service Quality	2,525	,013
	Water Rates	5,194	,000
	Technological Innovation	2,441	,016

Source: Processing Result of Data, 2024

According to the table 14, the T test was conducted to identify the relationship among the three separate variables, namely service quality (X1), water tariff (X2), and technological innovation (X3), separately to the customer satisfaction variable (Y).

a. The t-calculated value was 2.525, surpassing the t-table of 2.000, and the significant value for the relationship between service quality and customer happiness was 0.013, less than 0.05 (5%). Therefore, it may be said that H_1 is accepted, the service quality variable (X1) has a positive and significant impact on the customer satisfaction variable (Y).
b. The t-calculated value was 5.194, surpassing the t-table of 2.000, and the significance value for the impact of water tariff on customer satisfaction was 0.000, less than 0.05 (5%). Thus, it is possible to infer that H_2, or that the water pricing variable (X2) has a positive and significant impact on the customer satisfaction variable (Y), is acknowledged.
c. The t-calculated value was 2.441, over the t-table of 2.000, and the significant value for the impact of technical innovation on customer satisfaction was 0.016, less than 0.05 (5%). In light of this, it may be said that H_3, which states that the technical innovation variable (X3) significantly and favorably influences the consumer happiness variable (Y), is accepted.

Simultaneous Test Results (F Test)

Table 15 F Test

Model		F	Sig.
1	Regression	46,924	,000b

Source: Processing Result of Data, 2024

According to the table 15, utilizing the F test, the simultaneous relationship between the three independent variables—service quality (X1), water tariff (X2), and technological innovation (X3)—and the consumer satisfaction variable (Y) was assessed. The test's significance was 0.000, which

was less than the value of α = 0.05 (5%), suggesting that the three factors collectively had a significant impact on the dependent variable (consumer satisfaction). With a calculated F value of 46.924, surpassing the table F value of 2.70, it is possible to deduce that the variables of service quality, water tariffs, and technological innovation—collectively—had a positive and significant influence on the consumer satisfaction variables.

Determination Coefficient Test Results

The determination coefficient is used to evaluate the relationship between service quality, water tariff, and technological innovation together on customer satisfaction level.

Table 16. Coefficient of Determination Test

Model	R Square
1	,595

Source: Processing Result of Data, 2024

According to the table 16, the overall factors of service quality, water pricing, and technological innovation have a substantial impact on the customer satisfaction rating by 59.5%, as indicated by the R Square result of 0.595. This indicates that these three independent variables account for 59.5% of the variation in customer satisfaction levels, with additional factors not included in this model influencing the remaining variation.

In addition, conducting research by distributing questionnaires and processing them, the researcher also conducted research with data in the form of customer complaint documents at PDAM Tirtanadi HM Yamin Branch which was accumulated once a month. Data shows that in January there were 444 complaints received, two of which are still in process, and another 442 have been resolved by officers. Then in February there were 755 complaints received, three of which were still in process, and 752 others had been executed by officers. And in March there were 653 complaints received, 138 of which were still in the process of execution, and 515 others had been completed by officers.

From the data above, many complaints come from the problem of customer dissatisfaction with the quality of service, product quality, damage to the meter, bill complaints, and also inaccurate technology such as unstable meters. This attests to the researcher's conclusion that, at the PDAM Tirtanadi HM Yamin Branch, customer satisfaction is significantly impacted by three factors: service quality, water tariffs, and technological innovation.

H_1: Influence of Service Quality (X1) on Customer Satisfaction (Y)

The degree of customer satisfaction (Y) is positively and significantly influenced by the quality of service (X1), according to the analysis of the T test findings. Consequently, H0 was rejected and the H1 hypothesis was adopted. This result is consistent with the idea put forward by (Tjiptono, 2012) which holds that a number of factors, including assurance, reliability, empathy, responsiveness, and tangible service, have a big influence on customer satisfaction. The results corroborate those of earlier research by (Kereta, 2014) those who assert that service quality

significantly affects consumer satisfaction. Similar findings were also found in another study conducted by (Mustaghfiroh, 2019; Urfany & Muthohar, 2022) demonstrating the critical and noteworthy impact that service quality plays in raising customer satisfaction.

H_2: Influence Water Tariff (X2) on Customer Satisfaction (Y)

The water tariff (X2) has a positively and significantly impact on customer satisfaction (Y), according to the analysis of the T test findings. consequently, H0 is rejected, and the H2 hypothesis is adopted. These results provide credence to the argument advanced by (Kotler & Keller, 2009), ich contends that because pricing has a substantial impact on consumer purchase decisions, it is not simply a service component but also influences customer satisfaction. These findings also support earlier study by (Purba & Alvian, 2019), which demonstrates that pricing has a big influence on consumer satisfaction. The results of the study conducted (Asra et al., 2024) also show that pricing has a favorable and substantial impact on both customer satisfaction and competitive advantage. Additionally, (Anindya et al., 2022) confirms that pricing significantly and favorably affects consumer happiness.

H_3: Influence of Technological Innovation (X3) on Customer Satisfaction (Y)

The degree of customer satisfaction (Y) was shown to be positively and significantly impacted by technological innovation (X3), according to the analysis of the T test findings. Consequently, H_0 is rejected and the H_3 hypothesis is adopted. These results corroborate the notion put forward by (Handi, 2006), which indicates that while human factors account for around 70% of business failures in this area, technology and system elements play a significant role in satisfying consumer expectations. Additionally, this study supports the findings of earlier research by (Antanegoto et al., 2019), which discovered that innovation significantly and favorably affects consumer happiness. According to another research by (Huwaida & Kamilah, 2024), technology advancements—particularly those that are application-based—have a favorable effect on customer satisfaction, which is demonstrated by the rise in tax revenue objectives.

H_4: Influence of Service Quality (X1), Water Tariff (X2), and Technological Innovation (X3) Simultaneously on Customer Satisfaction (Y)

T According to the F test results, customer satisfaction (Y) is significantly and favorably impacted by service quality (X1), water tariff (X2), and technological innovation (X3) taken combined. With a contribution of 59.5%, it was determined by analyzing the regression determination coefficient that these factors together had a substantial and favorable influence on customer satisfaction (Y). These results suggest that while H_0 is rejected, the H_4 hypothesis is adopted. This supports the hypothesis (Handi, 2006) that the individual providing the service accounts for 70% of a company's inability to deliver services that satisfy consumer expectations, with technology and system variables accounting for the other 30%.

CONCLUSION

According to the data analysis in this research, it is evident that the first, customer satisfaction and service quality are positively and significantly correlated at PDAM Tirtanadi HM Yamin Branch. Second, customer satisfaction and water tariffs are positively and significantly correlated at PDAM Tirtanadi HM Yamin Branch. Third, customer satisfaction and technological innovation are positively and significantly correlated at PDAM Tirtanadi HM Yamin Branch. Fourth, customer satisfaction with service quality, water tariffs, and technological innovation together are positively and significantly correlated at PDAM Tirtanadi HM Yamin Branch.

According to this survey, 59.5% of the factors that affected the PDAM Tirtanadi HM Yamin Branch's customer satisfaction score were water tariffs, technological innovation, and service quality. This indicates that consumer happiness is significantly impacted by these three distinct elements. According to the study's findings, businesses may enhance customer happiness and lower water account arrears by enhancing service quality, modifying water tariffs correctly, and giving socialization of the use of recently launched technological breakthroughs top priority. Furthermore, the next research can explore other variables that have the potential to affect customer satisfaction of PDAM Tirtanadi HM Yamin Branch, with the hope of continuing to improve customer satisfaction and reduce their water account payment arrears.

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